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The Impact of Occupational Health and Safety Systems on Employees' Performance in Yemen's Oil and Gas Companies

(A Case Study of PetroMasila Company)

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Abstract:- The study aimed to assess the extent of implementing occupational health & safety (OH&S) systems in PetroMasila Company, to explore the relationship between OH&S systems and employees' performance, and to identify the impact of OH&S systems on employees' performance in PetroMasila Company. A descriptive analytical survey design was adopted and a primary data were obtained through e questionnaire which was designed and administered to 228 employees out of total 560 employees. The study was based on a simple random sampling. The data were analyzed through SPSS V.24 using a descriptive statistical tool namely frequencies, percentages, means, standard deviations and related weights to determine the extent of implementing OH&S systems while inferential statistical analysis tools such as correlation and regression were used to determine and explain the relationship and the impact of OH&S systems with employees' performance. The study showed that the extent of implementing OH&S systems in PetroMasila Company was high. The correlation analysis revealed a strong positive relationship between OH&S systems and employees' performance in PetroMasila Company. The regression analysis indicated that all OH&S systems combined or independent affect employees' performance.

Keywords:- *Occupational Health and SafetySystems; Employees' Performance; PetroMasila Company.*

I. INTRODUCTION

Globally the Oil & gas industry struggles to prevent injurious and fatal safety incidents. The implementation of occupational health and safety systems in recent decades has led to a successful control of workplace injuries in many companies. It has gained a considerable acceptance worldwide, and a large number of companies, including local companies in Yemen, have applied the requirements of it. However, few studies have examined the impact of OH&S systems on employees' performance in oil & gas industry. In 2018, McKnight conducted a study in US and found that safe worksites not only reduce safety incidents and fatalities but also promote successful, vibrant lives and healthy communities as well. Kim et al (2016) conducted a study in Hong Kong and found that occurrence of occupational damages and diseases has considerably reduced after scientific and technological changes as well as the establishment of occupational health and safety systems. Lebeau et al (2014) conducted a study in Canada and found that occupational accidents represent a social and economic burden for businesses. Thus, OH&S is a field concerned with protecting employees and other people affected by what the organization produces and does. It aims at protecting employees from the hazards and risks arising from their employment or their links with the organization and deals with the prevention of ill-health arising from working conditions (Armstrong, 2006).

Moreover, people are motivated not only by their unique personalities and by how they want to fit into their world but also by their own individual needs. Dr. Maslow identified five needs which are the physiological, safety, social, ego, and self-fulfillment needs. He said that people work to survive and live through financial compensation, to make new friends, to have job security, for a sense of achievement and to feel important in the society, to have a sense of identity, and most especially to have job satisfaction, all employees that have job satisfaction are high performers in their respective workplaces (Maslow, (1943).Job satisfaction, is a feeling of well-being and acceptance of our place in the organization, and it is important to us because it affects many other factors at work.It can have a direct effect on productivity, absenteeism, and turnover (Lussier, 2018).OH&S programs are most important in changing unsafe behavior and reducing accidents and injuries (Fleming & Lardner, 2002).Hazards present in the work environment can have a significant impact on productivity, safety and health, employee satisfaction, and employee turnover (Salvendy, 2012).

The impact of OH&S systems on employees' performance has been demonstrated in many studies, Kim et al, (2016) in their study the role of the safety climate in the successful implementation of safety management systems, found that safety management systems have a positive effect on safety performance. Andersen et al, (2019) found in his

study that OH&S policy may reduce injuries and fatalities as well as improve compliance with OH&S systems. Wambulwa (2018) investigated how OH&S systems could be properly observed to improve performance at Nzoia Water Company in Trans-Nzoia County and found that accident reduction enhances organizational growth, survival as well as performance. Gao et al (2019) investigated the mediating role of safety management practices in process safety culture in the Chinese oil industry, four safety management practices were identified in academic research and industrial practice, including organizing responsibilities/procedures, communication and coordination, safety training, and inspection and monitoring, all four safety management practices have positive mediating impact on safety culture.

According to (Tabitha, 2018) and (Putri, Triatmanto & Setiyadi, S. 2017) OH&S systems have a significant impact on employees' performance. (Mohammed 2018) conducted a study in Malaysia and found a strong correlation relationship between OH&S systems and the level of performance of employees, the availability of occupational safety and health systems have a positive impact on the level of performance of employees and vice versa from the point of view of employees in the company. In 2018 McKnight, conducted a study in a Northwest Ohio construction company in USA and found that top management established a safety-oriented culture by systematically implementing the safety management systems principles and practices in every organizational process, and safety training ensured that workers have the necessary skills to perform safely.

Global OH &S is the study of worldwide worker injury, illness, and fatality, the study of the factors that influence the well-being of workers internationally and also the study of the differences in occupational morbidity and mortality rates between countries .It is the analysis of complex intersections and interactions between economics, politics, culture, and science. (Fuller, 2019, p 1).

II. AN OVERVIEW OF PETROMASILA COMPANY

PetroMasila Company is a national Yemeni company working in the field of of oil and gas and related energy projects. It was founded on December 18, 2011 under Cabinet Resolution No. 244 for 2011, to operate Block 14, after expiration of the Production Sharing Agreement (PSA) with the former Canadian operator (Canadian Nexen).

In 2016, PetroMasila was assigned operatorship of three additional blocks, Block 10 , Block 51 and Block 53 in Hadramout governorate. In October 2016 ,it was assigned by the Cabinet to supervise the construction of a power plant project in Wadi Hadramout (75MW capacity) which is operated by gas fuel.

The plant station entered into service in early 2018. PetroMasila operates Ash-Shihr Terminal on the Arabian Sea, where crude oil produced from its block and other blocks in the region and transported by a 137 km pipeline for storage and export. The terminal contains six storage tanks with a total storage capacity of 3.5 million barrels. The company also produces diesel and associated gas which used for power generation and operational purposes as well as for supplying electricity to cities and villages in the Wadi Hadhramaut region (PetroMasila, 2019).

III. PROBLEM STATEMENT

OH&S system is one of the most important factors that impact employees' performance in companies, either positively by improving performance and feeling comfortable and safe, or negatively by exposure to many injuries and occupational diseases as a result of non-compliance with the OH&S rules and regulations (Mohammed et al,2017). The benefits of implementation such systems are good for the individual, families, healthcare system, employer and society in general.

However, there is a lack of local studies in Yemen in general and Yemeni oil and gas in particular. To our knowledge, there is no any recent study to explore the impact of OH&S systems on employees' performance in the Republic of Yemen. Also, the political, economic and social challenges that oil and gas companies face in the Republic of Yemen as a result of the dramatic changes brought by the new world order, impose on those companies to make changes in their administrative and legislative systems and to provide a healthy work environment free of accidents and occupational diseases to their employees. Moreover, OH&S systems in Republic of Yemen as indicated by (ILO, 2009) are very poor both in quality and quantity, there is no national OH&S policy and all relevant activities are not well planned or coordinated, which leads to a waste of resources.

Based on what has been established, the study aimed to clarify the extent of the implementing OH&S systems in Yemen's Oil & Gas Companies and their impact on employees' performance, in order to identify the positive aspects and work to strengthen them and identify weaknesses and work to correct them, as well as to know the impact of these practices to improve the employees' performance. Within this framework, the study problem can be formulated with the following question: What is the impact of OH&S systems on employees' Performance in Yemen's Oil & Gas Companies?

IV. HYPOTHESES OF THE STUDY

➢ *The First Main Hypothesis*

- H1.1: "There is a significant relationship between OH&S systems and employees' performance in PetroMasila Company"
- This hypothesis includes the following sub- hypotheses:
- H1.1. a. There is a significant relationship between OH&S policy and employees' performance in PetroMasila Company.
- H1.1. b. There is a significant relationship between top management commitment and employees' performance in PetroMasila Company.

- H1.1. c. There is a significant relationship between OH&S training and employees' performance in PetroMasila Company.
- H1.1. d. There is a statistically significant relationship between maintaining a healthy work environment and employees' performance in PetroMasila Company.
- H1.1. e. There is a significant relationship between accidents report and investigation and employees' performance in PetroMasila Company.

➢ *The Second Main Hypothesis*

- H1.2. "There is a significant impact for OH&S systems on employees' performance in PetroMasila Company."
- This hypothesis includes the following sub- hypotheses:
- H1.2. a. There is a significant impact for OH&S Policy on employees' performance in PetroMasila Company.
- H1.2. b. There is a significant impact for top management Commitment on employees' performance in PetroMasila Company.
- H1.2. c. There is a significant impact for OH&S training on employees' performance in PetroMasila Company.
- H1.2. d. There is a statistically significant impact for maintaining a healthy work environment on employees' performance in PetroMasila Company.
- H1.2. e. There is a significant impact for accidents report and investigation on employees' performance in PetroMasila Company.

V. MATERIALS AND METHODS

A. *Study Design*

The study adopted a descriptive analytical survey design. It was based on a simple random sampling. The data were analyzed through SPSS V.24 using a descriptive statistical tool namely frequencies, percentages, means, standard deviations and related weights to determine the extent of implementing OH&S systems while inferential statistical analysis tools such as correlation and regression were used to determine and explain the relationship and the impact of OH&S systems with employees' performance.

A structured e- questionnaire was used to obtain primary data. The questionnaire was divided into three sections: The first section contains questions that intended to obtain general demographic data, the second section contains questions that were used to measure the independent variable , OH&S systems ,based on five independent variables (OH&S Policy, Top Management Commitment, OH&S Training, Maintaining a Healthy Work Environment, and Accident Report and Investigation),while the third section contains questions that were used to measure the dependent variable which is employees' performance.

B. *Population and Sample*

The target population for the collection of data for the study is the employees of PetroMasila Company in Yemen as a case study. They are 560 employees. The study adopted simple random sampling techniques.

The sample size of this study was determined with reference to the formula of Thompson (2012.p59):

Where: n= the Sample Size - N = the population size (The population size of PetroMasila = 560 employees) - Z = Z value (e.g., 1.96 for 95% confidence level)

d = margin of error (0.05) - p = probability (0.50)

$$\frac{560 \times 0.25}{559(0.0025/3.8416) + 0.25}$$

n = 228 Employees

C. *Validity and Reliability of the Study Tool*

The e questionnaire was designed then it was reviewed and modified by the advisor of the study. Finally, the questionnaire applied to six professors from Taiz University in order to assess whether or not the questionnaire measures what it is supposed to measure. The study put their suggestions and notices into consideration and modified the questionnaire into its final draft .The study conducted pretesting of the draft questionnaire as an exploratory study which was made of a sample of 30 employees from PetroMasila Company. The data of the 30 respondents were filled into SPSS.V.24 and analyzed to determine the reliability and internal consistency of the study tool.

Table 1 Cronbach's Alpha and the Validity for the Entire Questionnaire

Field	NO. of Items	Reliability	Validity
OH&S Policy	6	0.880	0.93
Top management Commitment	6	0.895	0.94
OH&S Training	7	0.935	0.96
Maintaining A Healthy Work Environment	7	0.854	0.92
Accidents Report and Investigation	7	0.895	0.94
Performance	11	0.924	0.96
Total	44	0.976	0.98

The above table shows that the values of Cronbach's Alpha are in the range from 0.854 and 0.976 which are considered high. The total value Cronbach's Alpha is 97% which confirms an excellent reliability and internal consistency of the study tool. Thus, the questionnaire is valid, reliable, consistent and ready for distribution for the study sample.

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VI. RESULTS AND DISCUSSION

A. *Test of Normality*

Prior to statistical data analysis, normality test was performed to determine whether a data was modeled for normal distribution or not. This test is mandatory prior to hypotheses testing. George &Mallery, (2019.) stated that the values of kurtosis and skewness in between (-1, 1) are considered excellent for most psychometric purpose, but values between (-2, 2) in many cases also acceptable. Thus, If the kurtosis and skewness values occurred between (-1, 1) or (-2, 2) data set is normally distributed, if not, it is not normally distributed.

Table 2 Test of Normality

Field	Skewness Statistic	Kurtosis Statistic
OH&S Policy	-0.813	1.513
Top management Commitment	-0.464	0.863
OH&S Training	-0.034	-0.231
Maintaining A Healthy Work Environment	0.027	-0.593
Accidents Report and Investigation	-0.402	0.371
OH&S Systems	0.026	-0.398
Performance	-0.066	-0.108
Total	0.068	0.0327

From table 2, the statistic values of skewness are in between (-1, 1). Similarly, the statistic values of kurtosis are in between (-1, 1) except the field OH&S policy which is in between (-2, 2). This result indicated that data set is normally distributed and consequently linear regression test should be used to test hypotheses.

B. *Descriptive analysis of the sample characteristics*

The Characteristics of the respondents are categorized by their gender, age, qualification, job title and years of experience. An analysis of frequencies was undertaken in order to explore the characteristics as illustrated below:

- *Gender*

Table 3 Gender

Gender	Frequency	Percent
Male	219	99.5
Female	1	0.5
Total	220	100.0

Table 3 Shows that majority of the respondents, representing 99.5% were males, whereas 0.05% were female from the total number of the sample. These results clearly show that there are more male employees at PetroMasila Company than female employees due to the nature of work in oil &gas industry.

- *Age*

Table 4 Age

Age	Frequency	Percent
Less than 18 Years	0	0
Between 18 and 30 Years	10	4.5
Between 31- 40 Years	119	54.1
Between 41-50 Years	82	37.3
More than 51 Years	9	4.1
Total	220	100.0

Table 4 shows that 4.5 % of the respondents were within age spread of 18-30 years, 54% were between 31 -40 years ,37% were between 41-50 years while 4.1% of the respondents were more than 51 years.

- *Qualification*

Table 5 Qualification

Qualification	Frequency	Percent
Secondary School	1	0.5
Diploma	30	13.6
Bachelor Degree	139	63.2
Master Degree	42	19.1

Doctorate	8	3.6
Total	220	100.0

Table 5 shows that 0.5% of the respondents hold "secondary school", 13.6%" hold Diploma degree ,63.2% hold Bachelor's degree ,19.1% hold a master degree and 3.6 % of the respondents hold doctorate degrees. This indicates that the company is interest in employing educated employees in order to be able to perform the job with the set standards.

- *Job Title*

Table 6 Job Title

Job Title	Frequency	Percent
Manager	25	11.4
Supervisor	83	37.7
Technician	49	22.3
Engineer	37	16.8
Labor	8	3.6
Others	18	8.2
Total	220	100.0

Table 6 shows that 11.4% of the respondents were managers, 37.7% were supervisors, 22.3% were technician, 16.8% were engineers ,3.6% were labors and 8.2% of the respondents were from other positions. This implies that the majority of respondents are authoritative to provide reliable data regarding OH&S systems in the company.

- *Years of Experience*

Table 7 Years of Experience

Years of Experience	Frequency	Percent
Less than 5 Years	4	1.8
5-10 Years	89	40.5
11-15 Years	95	43.2
16-20 Years	18	8.2
More than 20 Years	14	6.4
Total	220	100.

Table No. 7 shows that 1.8% of the respondents had less than five years work experience, 40.5 % had 5-10 years, 43.2% had 11-15 years ,8.2% had 16-20 years and 6.4 % had more than 20 years. Thus, majority of the respondents had 11-15years' work experience which is a good sign that respondents would be experienced employees on the job.

C. The Extent of Implementation OH&S Systems

The below table shows that the extent of implementing OH&S systems at PetroMasila Company.

Table 8 The Extent of Implementation OH&S Systems

Independent Variable	Mean	Sd. Deviation	Related Weight	Level of Agreement
OH&S Policy	4.24	0.498	84.83	Very high
Top managment Commitment	4.10	0.554	81.97	High
OH&S Training	4.10	0.518	81.93	High
Maintaining A Healthy Work Environment	4.19	0.470	83.76	High
Accidents Report and Investigation	4.31	0.461	86.14	Very high
Total OH&S Systems	4.18	0.433	83.74	High

The study revealed that the extent of implementing OH&S systems at PetroMasila Company was high (83.74) as revealed by mean response of (4.18) with standard deviation equals to (0.433), these findings are consistent with (Greepherson, 2013) and (Maryjoan & Ezekiel, 2016) and inconsistent with (Katsuro et al, 2010) who found a bad OH&S practices in food factories which decrease employees' performance leading to the decline of productivity.

The study revealed that the implementing extent of OH&S policy in PetroMasila Company was very high as revealed by mean response of (4.24) with standard deviation equals to (0.498) and related weight 84.83%. OH&S policy is seen to have been implemented adequately and there is an awareness for the importance of OH&S policy as well as job description, roles and responsibilities of the employees are outlined in OH&S policy and well defined. Moreover, there is a good communication between management and employees. These findings are consistent with (Gbadago et al,2017) study which found that OH&S policy has been

implemented in the hospital and with the study of (Esi,2012) which showed that majority of the respondents representing 91.7% intimated that the company has OH&S policy while 10 representing 8.3% postulated that company hasn't OH&S policy. The findings also match the findings of (Tabitha, 2018). The findings are inconsistent with (Keshawn & Nielsen, 2016) who showed that the weakness of implementation risk assessment is related to an inadequate policy and framework of the risk assessment.

The study showed that the top management of PetroMasila Company demonstrates a high commitment towards OH&S systems as revealed by mean response of (4.10) with standard deviation equals to (0.554) and related weight 81.97%. The study revealed that top management gave priority to OH&S systems and responded to employees' suggestion regarding OH&S issues and reward them. There is an effective management in the company as managers concern about the protection of the employees from workplace hazards and they allocate all the necessary resources to support OH&S system. The findings imply that there is a strong commitment from top management which is a critical factor for effective OH&S system with support from employees in reporting any violation of health and safety acts or unsafe conditions in the workplace.it further implies that management leadership was the most strongly associated with lower accidents and injury rates, as (ILO, 2005) stated that, occupational accidents and ill-health are avoidable or reduced with a positive commitment from both managers and employees. This finding is consistent with (Autenieth, 2015) who showed that management leadership was the most strongly associated with lower accidents and injury rates. The finding is inconsistent with (Patrick et al, 2017) who found that management didn't implement OH&S systems as they are financially constrained, and inconsistent with (Khaleel, 2008) who showed that there is a lack of attention to OH&S Programs by the administrative supreme hospital, as well as inconsistent with (Keshawn & Nielsen, 2016) who showed that there is a gap in the understanding and practice of the risk assessment tool between top management and operation.

The study showed that the extent of implementing OH&S training in the PetroMasila Company was high as shown by the mean responses of (4.10) with standard deviation equals to (0.518) and related weight of 81.93 %. These findings imply that PetroMasila Company has an appropriate OH&S training programs to all its staff and new employees. This finding is consistent with (Autenieth, 2015) who found that the company has an appropriate safety program, and inconsistent with (Olouch, 2015) who found that the Level of implementing OH&S Training was moderate as the company partially conducted OH&S training, and also inconsistent with (Greepherson, 2013) and (Abdullah, 2010) who found that there is a lack of safety training in the public hospitals.

The study showed that the extent of maintaining a healthy work environment in the company was high as revealed by the mean responses of (4.19) with standard deviation equals to (0.570) and relative weight of 83.76 %. This implies that PetroMasila Company is maintaining a safe and healthy working environment in order to eliminate hazards and reduce risks involved in the workplace which is one of the most objectives of OH&S systems. This reflected by applying PTW system in the working area and providing all the necessary preventive means as well as conducting periodic inspections to all tools and equipment. This finding is consistent with the recommendation of (ILO, 2016) and (Stephen & Timothy, 2017) who said that the purpose of OH&S systems is to create a safe working environment to protect employees from workplace accidents or adverse events.

The study revealed that the extent of implementing accident report and investigation system in the company was very high as revealed by the mean responses of (4.31) with standard deviation equals to (0.461) and related weight of 86.14%. This implies that accidents can be avoided or reduced through implementing an effective OH&S system in the workplace. The results reflect that the PetroMasila Company has established an accident reporting system and accident investigation to control the risks. There is an indication that mitigation measures were put in place to avoid reoccurrence of the accidents. This finding is inconsistent with (Katsuro et al, 2010) and with (Maryjoan, &Ezekiel 2016) who found that accidents are not reported or recorded, they are not known to the management. The findings also indicate that there is a medical preparedness and response team to deal with accidents and injuries in the workplace.

D. Hypothesis Testing Results

In order to analyse the main hypotheses and the sub-hypotheses, Pearson correlation and a simple linear regression analysis were performed based on five independents factors of OH&S systems and employees' performance as the dependent factor.

- *The Result of the First Main Hypothesis Test*

In order to analyse this hypothesis, Pearson correlation coefficient has been applied and the results are presented in the below table:

Table 9 Correlation between OH&S Systems and employees' performance

Independent Variable	Dependent Variable	Correlation	Sig.	Result
OH&S Systems	Employees' performance	0.777**	0.000	Positive
** Correlation is significant at the 0.01 level.				

The above table shows a presence of a strong positive correlation (R= 0.77) between OH&S systems and employees' performance and it is statistically significant at 0.01 level (P-value <0.01).

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Hence, the analysis indicates that higher implementation of OH&S systems has higher employees' performance which means that OH&S systems play a significant role in enhancing and improving employees' performance. Therefore, the first main hypothesis of the study is accepted which stated that: there is a statistically significant relationship between OH&S systems and employees' performance in PetroMasila Company.

➢ *The Results of the First Sub- Hypotheses Test, Emanating from the First Main Hypothesis*

In order to analyze the sub hypotheses, Pearson correlation was performed between the factors of OH&S systems and employees' performance. The results are presented below table:

Table 10 Correlation between the Dimensions of OH&S Systems and Employees' Performance

		OH&S Systems				
		OH&S Policy	Top mgt. Commit.	OH&S Training	Maintain a healthy work Env.	Accident Report and Investigation
Employees' performance	R	0.622**	0.655**	0.693**	0.721**	0.681**
	Sig.	0.000	0.000	0.000	0.000	0.000
	Result	Positive	Positive	Positive	Positive	Positive
	Rank	5	4	2	1	3
** Correlation is significant at the 0.01 level.						

➢ Table no. (10) shows:

- A presence of a medium positive correlation **(R=0.62)** between OH&S Policy and employees' performance, which is statistically significant at 0.01 level (P-value<0.01). Hence, the study supported the **H1.1 a** "There is a statistically significant relationship between OH&S Policies and employees' performance in PetroMasila Company. It means that the implementation of OH&S policy improves the employees' performance.
- A presence of a medium positive correlation**(R=0.65**) between top management commitment and employees' performance which is statistically significant at 0.01 level (P-value<0.01). Hence, the study supported the **H1.1 b** "There is a statistically significant relationship between top management commitment and employees' performance in PetroMasila Company. It means that the commitment of top management to OH&S systems improves the employees' performance.
- A presence of a medium positive correlation**(R=0.69)** between OH&S training and employees' performance which are statistically significant at 0.01 level (P-value<0.01). Hence, the study supported the **H1.1.c** - There is a statistically significant relationship between employees' OH&S training and employees' performance in PetroMasila Company. It means that the implementation of OH&S training improves the employees' performance.
- A presence of a strong positive correlation**(R=0.72)** between maintaining a healthy work environment and employees' performance which is statistically significant at 0.01 level (P-value<0.01). Hence, the study supported the. **H1.1. d** -There is a statistically significant relationship between maintaining a physical working environment and employees' performance in PetroMasila Company. It means that maintaining a healthy work environment improves the employees' performance.
- A presence of a medium positive correlation**(R=0.68)** between accident report and investigation and employees' performance which is statistically significant at 0.01 level (P-value<0.01). Hence, the study supported the **H1.1. e** -There is a statistically significant relationship between accidents report and investigation, and employees' performance in PetroMasila Company. It means that the implementation of accident report and investigation system improves the employees' performance.

In general, all the independent variables are correlated to the dependent variable. So, it can be said that "there is a positive statistically significant correlation between OH&S systems and the employee's performance in PetroMasila Company ". Therefore, all the sub- hypotheses of the study are confirmed.

➢ *The Result of the Second Main Hypothesis Test*

Table 11 Regression Analysis for the Second Main Hypothesis

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	26.374	1	26.374	331.38	0.00
Residual	17.350	218	0.094		
Total	43.723	219			
Variable	**Unstandardized Coefficient**		**t- Value**		**Sig**
	B	**Std.Error**			
Constant	0.839	0.185	4.536		0.00
OH&S Systems	0.800	0.044	18.204		0.00
R Square =0.603, Dependent Variable: Employees' Performance					

The above table shows that the analysis of variance (F= 331.38) and associated P-value (sig) = (0.00) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01).It indicates that the model is significant and there is a linear relationship between the independent variable (OH&S systems) and the dependent variable (Employees' Performance).The above table (XI)also shows that the R Square value of 0.603 which indicates that the OH&S systems are accounted for 60% of the total variance in employees' performance and 40% implied that there are other factors not studied in this study that impact employees' performance at PetroMasila Company in Yemen. Moreover, the regression results of coefficient determinants in the above table (4.16) show that the statistical values for the constant is (0.839) and (B value) is (0.800) with t value equals (18.717), and P-values (sig) less than (0.01) which confirmed that there is a statistically significant impact for OH&S systems on employees' performance. The regression equation from this data becomes in the form of:

- **Y= α+ Bx+Ui**
- **Y (**Employee Performance) = **(**Constant 0.839 +0.800 (OH&S Systems)

The above equation means that one-unit changes in OH&S systems will lead to change Employee Performance by (0.800) units.

Therefore, the study accepted the main hypothesis which stated that there is a significant impact for OH&S systems on employees' performance.

➢ *The Result of the First Sub-Hypothesis Test emanating from the second main hypothesis*

In order to explore the impact of OH&S policy on employees' performance a simple linear regression test was performed and the result presented in the below table:

Table 12 The Impact of OH&S Policy on Employees' Performance

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	16.895	1	16.895	137.286	0.000
Residual	26.828	218	123		
Total	43.723	219			
	Unstandardized Coefficient		**t-value**		**Sig**
Variable	**B**	**St. Error**			
Constant	1.824	0.203	8.976		0.00
OH&S Policy	0.558	0.048	11.717		0.00
R Square = **0.386,** Dependent Variable: Employees' Performance					

The above table shows that the analysis of variance (F= 137.286) and associated P-value (sig) = (0.000) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01).It indicates that the model is significant and there is a linear relationship between the independent variable (OH&S policy) and the dependent variable (Employees' Performance).The above table (XII) also shows that the R Square value of 0.386 which indicates that the OH&S policy is accounted for 38 % of the total variance in employees' performance and 62% implied that there are other factors that impact employees' performance at PetroMasila Company in Yemen. Moreover, the regression results of coefficient determinants in the above table (XII) show that the constant is (1.824) and OH&S policy coefficient is (0.528) which means that one-unit changes in OH&S policy will lead to change employee performance by (0.528) units. Therefore, the study accepted the first sub- hypothesis which stated that there is a significant impact for OH&S policy on employees' performance.

➢ *The Result of the Second Sub-Hypothesis Test, emanating from the second main hypothesis*

To explore the impact of top management commitment on employees' performance a simple linear regression test was performed and the result presented in the below table:

Table 13 The Impact of Top Management Commitment on Employees' Performance

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	18.745	1	21.007	163.593	0.000
Residual	24.979	218	0.104		
Total	43.723	219			
	Unstandardized Coefficient		**t-value**		**Sig**
Variable	**B**	**St. Error**			
Constant	2.026	0.171	11.876		0.00
Top mgt comtt.	0.528	0.041	12.790		0.00
R Square = **0.429,** Dependent Variable: Employees' Performance					

The above table shows that the analysis of variance (F= 163.593) and associated P-Value (sig) = (0.000) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01).It indicates that the model is significant and there is a linear relationship between the independent variable (top management commitment) and the dependent variable (Employees' Performance).It also shows that the R- Square value of 0.429 which indicates that the top management commitment is accounted for 43 % of the total variance in employees' performance and 57% implied that there are other factors that impact employees'

Performance at PetroMasila Company in Yemen. Moreover, the regression results of coefficient determinants in the above table (13) show that the statistical values for the constant is (2.026) and (B value) is (0.528) with t value equals (12.790), and P-values (sig) less than (0.01) which confirmed that there is a statistically significant impact for top management commitment on employees' performance at PetroMasila Company. Thus, the study accepted the second sub- hypothesis which stated that there is a statistically significant impact for top management on employees' performance.

- *The Result of the Third Sub-Hypothesis Test, emanating from the second main hypothesis*

In order to explore the impact of OH&S training on employees' performance a simple linear regression test was performed and the result presented in the below table:

Table 14 The Impact of OH&S Training on Employees' Performance

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	21.007	1	21.007	201.597	0.000
Residual	22.716	218	0.104		
Total	43.723	219			
Variable	**Unstandardized Coefficient**		**t- Value**		**Sig**
	B	**St. Error**			
Constant	1.738	0.174	9.992		0.000
OH&S Training	0.598	0.042	14.198		0.000
R Square = **0.478, Dependent** Variable: Employees' Performance					

The above table shows that the analysis of variance (F= 201.597) and associated P-Value (sig) = (0.000) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01).It indicates that the model is significant and there is a linear relationship between the independent variable (OH&S Training) and the dependent variable(employees' performance).It also shows that the R square value of 0.478 which indicates that the OH&S training is accounted for 48 % of the total variance in employees' performance and 52% implied that there are other factors that impact employees' performance at PetroMasila Company in Yemen. Furthermore, the regression results of coefficient determinants in the above table (4.19) show that the statistical values for the constant is (1.320) and (B value) is (0.598) with t value equals (14.198), and P-values (sig) less than (0.01) which confirmed that there is a statistically significant impact for OH&S training on employees' performance in PetroMasila Company. Thus, the study accepted the third sub-hypothesis which stated that there is a statistically significant impact for OH&S training on employees' performance.

- *The Result of the Fourth Sub-Hypothesis Test, emanating from the second main hypothesis*

In order to explore the impact of maintaining a healthy work environment on employees' performance a simple linear regression test was performed and the result presented in the below table:

Table 15 The Impact Of Maintaining A Healthy Work Environment On Employees' Performance

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	22.717	1	22.717	235.745	0.000
Residual	21.007	218	0.096		
Total	43.723	219			
Variable	**Unstandardized Coefficient**		**t- Value**		**Sig**
	B	**St. Error**			
Constant	1.320	0.188	7.019		0.000
Maintaining a healthy work environment	0.685	0.045	15.354		0.000
R Square =**0.517** Dependent Variable: Employees' Performance					

Table 15 shows that the analysis of variance (F= 235.745) and associated P-Value (sig) = (0.000) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01). It indicates that the model is significant and there is a linear relationship between the independent variable (maintaining a healthy work environment) and the dependent variable (employees' performance).

The table also shows that the R square value of 0.517 indicates that a healthy work environment is accounted for 51 % of the total variance in employees' performance and 49% implied that there are other factors that impact employees' performance at PetroMasila oil Company in Yemen. Moreover, the regression results of coefficient determinants in the above table (4.20) show that the statistical values for the constant is (1.320) and (B value) is (0.685) with t value equals (15.354), and P-values (sig) less than (0.01) which confirmed that there is a statistically significant impact for maintaining a healthy work environment on employees' performance.at PetroMasila Company. Thus, the study confirmed the fourth- hypothesis which stated that there is a statistically significant impact for maintaining a healthy work environment on employees' performance in PetroMasila Company.

➢ *The Result of the Fifth Sub-Hypothesis Test, emanating from the second main hypothesis*

Table 16 The Impact of accident report and investigation on employees' performance

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	20.297	1	20.297	188.872	0.00
Residual	23.427	218	0.107		
Total	43.723	219			
Variable	**Unstandardized Coefficient**		**t- Value**		**Sig**
	B	**St. Error**			
Constant	1.343	0.208	6.451		0.000
Accident Report & Investigation	0.661	0.048	13.743		0.00
R Square = **0.464** **,** Dependent Variable: Employees' Performance					

The above table shows that the analysis of variance (F= 188.872) and associated P-Value (sig) = (0.000) which is significant at 0.01 level due to P-value (sig.) shown is less than (0.01). It indicates that the model is significant and there is a linear relationship between the independent variable (the accident report and investigation) and the dependent variable (Employees' Performance).

Table (XVI) also shows that R Square value of 0.464 indicates that accident report and investigation are accounted for 46 % of the total variance in employees' performance and 54 % implied that there are other factors that impact on employees' Performance in PetroMasila Company in Yemen. Moreover, the regression results of coefficient determinants in the above table (4.21) show that the statistical values for the constant is (1.343) and (B value) is (0.661) with t value equals (13.743), and P value (sig) less than (0.01) which confirmed that there is a statistically significant impact for accident report and investigation on employees' performance. Thus, the study confirmed the fifth sub- hypothesis which stated that there is a statistically significant impact for accident report and investigation on employees' performance in PetroMasila Company.

VII. CONCLUSION

Oil & gas industry is known for its wide range of hazardous activities compared to other industries, and as such requires special attention towards OH&S system to improve employees' performance. This study aimed to determine the extent of implementation OH&S Systems and their impact on employees' performance at PetroMasila Company in Yemen. The data was collected through the e-questionnaire in order to provide a real picture about the extent of implementation OH&S Systems and their impact on employee's performance. Descriptive analysis was performed using mean, standard deviation, and relative weight in order to determine the extent of implementation OH&S Systems. To identify the impact of OH&S Systems on employees' performance a simple linear regression analysis was performed based on five independents factors and employees' performance as the dependent factor.

The study showed that the extent of implementation OH&S Systems at PetroMasila Company was high. A correlation analysis revealed a strong positive relationship between OH&S Systems and Employees' performance. Regression analysis indicated that there was a significant positive impact of OH&S Systems on employees' performance. The study showed that the implementation of OH&S systems plays a significant role in the performance of employees. It can be concluded that continuous improvement of OH&S systems should be promoted in the oil & gas industry in order to protect the lives of employees at the work place.

REFERENCES

[1]. Abdullah, N. (2010). Occupational Health and Safety Management Perception in Malaysian Public hospitals. PhD Submitted to the school of public health, Curtin University of Technology.

[2]. Andersen, J., Malmros, P., Ebbehoej, N., Flachs, E., Bengtsen, E., Bonde, J. (2019). Systematic literature review on the effects of occupational safety and health (OSH) interventions at the workplace, Scand J Work Environ Health, 45 (2), 103–113.

[3]. Armstrong, M. (2006). Strategic Human Resource Management: A guide to Action, 3th Edition.UK: London and Philadelphia.

[4]. Autenieth, D. (2015). Occupational health and safety management Systems in animals' production Agriculture. PhD submitted to the department of Environment and Radiological Health Sciences, Colorado State University.

[5]. Esi, Y. (2012). The Effect of Occupational Health and Safety Standards on Productivity. Master Thesis submitted to the Institute of Distance Learning, Kwame Nkrumah. University of Science and Technology. Commonwealth.

[6]. Fleming, M., & Lardner, R., (2002). Strategies to promote safe behaviour as part of a health and safety management system, 1st Edition.UK: the Keil Centre 5 South Lauder Road Edinburgh.

[7]. Fuller, P. (2019). Global Occupational Safety and Health Management Handbook. London; New York: Taylor & Francis Group, LLC.

[8]. Gao, Y., G., Fan, Y., Wang, J., & Pei, J. (2019). The mediating role of safety management practices in process safety culture in the Chinese oil industry. Journal of Loss Prevention in the Process Industries, 57, 223–230.

[9]. Gbadago, P., Amedome, S., & Honyenuga, B. (2017). The Impact of Occupational Health and Safety measures on the employees' Performance. Global Journal of Medical Research, (17) 5.
[10]. George, D., & Mallery, P. (2019). IBM SPSS Statistics 25 Step by Step,15th Edition. New York, USA: Taylor & Francis Group, LLC.
[11]. Greepherson, A. (2013). The Impact of Health and Safety Programs on the organizational Performance. Master Thesis of Human Resource Management submitted to the Open University of Tanzania.
[12]. International Labor Organization (2005). Safety and Health. Information available on: https://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm. Geneva, Switzerland (cited on 5 May 2019).
[13]. International Labor Organization (2016). Report for discussion at the Tripartite Sectoral Meeting on OSH and Skills in the Oil and Gas Industry Operating in Polar and Subarctic Climate Zones of the Northern Hemisphere. Geneva, Switzerland.
[14]. International Labor Organization (2009). Yemen. Information available on: https://www.ilo.org/safework/countries/arab-states/yemen/lang--en/index.htm Safety. Adoption: 1998 | Date of entry into force: 1998-02-18 | YEM-1998-M-57366, Geneva. Switzerland (cited on 10 May 2019).
[15]. Katsuro, P., Gadzirayi, C., Taruwona, M., & Mupararano, S. (2010). Impact of occupational health and safety on worker productivity. Academic Journal, 4(13), 2644-2651.
[16]. Kaynak, R., Toklu, A., Elci, M. &Toklu, I (2016). Effects of Occupational Health and Safety Practices on Organizational Commitment. Work Alienation, and Job Performance. International Journal of Business and Management, 11 (5).
[17]. Keshawn, & Nielsen Y. (2017). Evaluation of safety engineering system in Oil and Gas construction projects in UAE. International Journal of GEOMATE, 12 (29), 178-185.
[18]. Khaleel, A. (2008). Assessment of Occupational health and safety and its impact on employees' performance in the Gaza public hospitals. Master Thesis submitted to Islamic University of Gaza.
[19]. Kim, Y, Park, J, & Park, M. (2016). Creating a culture of prevention in occupational safety and health practice. Safety and Health at Work.doi: 10.1016/j.shaw.2016.02.002.
[20]. Lebeau, M., Duguay, P., & Boucher, A (2014). Costs of occupational injuries and diseases in Quebec. Journal of Safety Research, 50, 89-98.
[21]. Lussier Robert (2018). Human Resource Management: Functions, Applications, and Skill Development, 3rd Edition. USA: SAGE Publications Inc.
[22]. Maryjoan, U., &Ezekiel, T. (2016). Effects of Industrial Safety and Health on Employees' Job performance in selected cement companies. International Journal of Business and Management Review, 4 (3)49-56.
[23]. Maslow, A. (1943). A Theory of Human Motivation. Psychological Review .50, 270-306.
[24]. Mcknigh, A. P. (2018). Strategies Small Construction Business Managers Use to Reduce Safety Incidents in Their organization. PhD submitted to college of management and Technology, Walden University.
[25]. Mohammed, O. (2018). The impact of implementation OSH System on employees' performance. Jordon. Journal of Human Development and Education for specialized Research, 4 (2).
[26]. Mohammed, O., Tengku, M., Aligilat, M., & Alatif, A. (2017). Could Occupational Safety and Health Systems Improve Employees' Performance in Arab Nations? The International Journal of Social Sciences and Humanities Invention, 4 (8).
[27]. Oluoch, E. (2015). Effect of Occupational Health and Safety programs on Employee Performance at Kenya power Company. A master thesis in Human Resource Management submitted to the School of business, University of Nairobi.
[28]. Patrick, G., Sedem N., &Ben Q. (2017). The Impact of Occupational Health and Safety Measures on Employee Performance at the South Tongu District Hospital. Global Journals of Medical Research, 17 (5).
[29]. PetroMasila (2019). An overview of the company. Information available on www.pertomasila.com. (Cited on 16 December 2019).
[30]. Putri, O., Triatmant, P., & Setiyadi, S. (2017). The effect of occupational health and safety, work environment and discipline on employee performance in a consumer goods company.IOP.Publishing ltd, 337, doi:10.1088l1757-899x/33771/012036.
[31]. Salah, A. (2010). The impact of workplace design on employees' performance: An Empirical study of the Administration Building of Islamic University of Gaza. Master Thesis submitted to Islamic University of Gaza.
[32]. Salvendy, G. (2012). Handbook of Human Factors and Ergonomics, 4th Edition.UK: John Wiley & Sons, Inc.
[33]. Stephen, P. & Timothy, A. (2017). Organizational Behavior,17th Edition. US: Pearson Educational Limited.
[34]. Tabitha, M. (2018). Influence of Occupational Health and Safety Practices on Employees' Performance at Kenya Power and lighting Company. Master Thesis submitted to the School of Business, University of Nairobi
[35]. Thompson K. S. (2012). Wiley Series in Probability and Statistics: Sampling, 3rd Edition. A John Wiley & Sons.Inc.
[36]. Wambulwa, B., & Elizabeth, M. (2018). Effect of Occupational Safety and Health on Organizational Performance: A Case of Nzoia Water in Trans-Nzoia County, European Journal of Business and Management, 10 (11)