

The Influence of Safety Slogan and Safety Program to Safety Culture: Case study at Drilling and Well Intervention Division one of Indonesia's Oil and Gas Company

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ABSTRACT

In the Oil and Gas Industry, Occupational Safety and Health are prioritized. This is not only based on the high risk in this industry but also part of maintaining the name of a company in developing its business. Because if a company's occupational safety and health record is bad, then investors will re-think for investing in the company. Occupational Safety and Health will be included as one of the points in the Key Performance Indicator of the company. The PTM as a subsidiary of one of oil company in developing country also considering that maintaining occupational safety and health properly is the main thing. As one of the upstream businesses in the field of oil and gas consisting of exploration and production, work operations at PTM have a high level of accident and occupational health risk. Mainly in drilling and well intervention operation. The company's vision and mission are then carried out with a Safety Management System and use a safety slogan as the objective of the organization. The embodiment of this slogan is through safety programs which was implemented in drilling rigs and well intervention barges with purpose to create free accident on working environment for PTM workers and their contractors. The transfer of management of the operational Block from previous operator to PTM in 2018 also affected the culture of occupational safety and health in the work area, especially in the field. Based on these conditions, this research was conducted to find out whether the safety culture practiced by PTM employees in the Drilling and Well Intervention division in the field is good enough. And to find out whether the safety slogans and safety programs that were carried out in part at the previous operator had an influence on the existing safety culture. The research method uses quantitative methods with research instruments in the form of questionnaires using a Likert scale. The population in this study were permanent and contractor employees who worked on drilling rigs and well intervention barges. The results showed that in general, the Company has a safety slogan and safety program that influences the safety culture implemented by employees. However, there is still a need to transform and improve the safety program in PHM in general and in the implementation of Drilling and Intervention.

Keywords: Drilling and Well Intervention, Occupational Safety and Health, Safety Culture.

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I. INTRODUCTION

In the world of industry safety is very important. Therefore, all companies try to ensure that in their work operations is safe and there are no accidents. There are many definitions of accident. According to Phil Hughes (NEBOSH 2011), the definition of an accident is any unplanned event that causes injury or illness to humans, damage or loss to property, plants, materials or the environment or loss of business opportunities.

Meanwhile, the definition of a work accident is an undesirable and initially unexpected event that can cause both casualties and property (Local government law). This work

accident is highly avoided by all industries can cause various losses, be it damage, disability, death, and effect to the business. There are also other losses that are indirectly the result of accidents, such as loss of time from works affected by accidents, damage to the equipment used, disruption of the product process, medical expenses of injured employees, also poor performance of a company can decrease the stock value of a company.

The cause of the accident can be divided into two into indirect causes and direct causes. Where direct burdening is caused by unsafe actions and unsafe working environment conditions.

According to the records of the Social Security Organizing Agency employment in this country, in 2017 the number of reported work accidents reached 123,041 cases, while throughout 2018 it reached 173,415 cases. For 2019, it was 182835 cases, and experienced an increase in cases by 21.28% to 221,740 cases in 2020. Then, in 2021, it increased again to 234270 cases of work accidents.

Industries whose accident rates are also high are the gas and petroleum industries. Where the gas and petroleum industry are an industry with high costs, high technology and also high risks. Where this industry is the center of the industry of many countries, because its products are used to drive almost all other industries that use fossil energy sources as a source of driving force.

The oil and gas industry includes upstream and downstream activities globally starting from exploration, extraction, refining, transportation (can be through tankers and pipelines) to marketing of its petroleum products. The risk of accidents from this operation is very high, so in every oil and gas company there is a special department that runs programs to prevent accidents occur in the operation, not only occupational incident but also major incident.

Every year, the International Association of Oil & Gas Producers (IOGP) releases performance data from oil and gas producing companies that are members of which there are approximately 59 oil and gas companies. From these data, accidents still occur even accidents that cause the death of their workers.

From the chart above, in 2021 there was an increase in the Fatal Accident rate compared to the data in 2020. From 14 accident deaths in 2020, it increased to 20 cases of accidental deaths. The Fatal Accident Rate is 0.75 or 36% higher than in 2020 (0.55). From 20 fatality incident of IOGP members which occurred in 2021, the highest occurred in the transportation section (7), Maintenance and inspection (5), Project (3), Drilling and Well Intervention (2), the rest at the time of lifting (crane, rigging) and marine operations (2).

Although the development of technology in the oil and gas industry is very high to prevent accidents, the human factor remains the most important key. That why the ability, and competence of the workers must still be a factor that must be considered. This ability and competence also include an

understanding of safety slogans and safety campaigns or programs made by the company, as well as the participation of employee in the implementation of these programs.

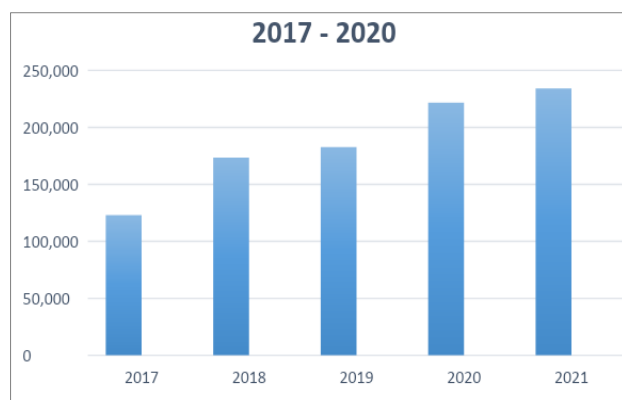


Fig. 1. Number of work accident in Indonesia.
Source: Institution of social security employment.

II. BUSINESS ISSUE

Based on the standards set by the Occupational Safety and Health Administration (OSHA) which is part of the Department of Labor in the United States, an incident that occurs can be divided into 2 (two). The first is the injuries and illnesses that are recorded, the second is the injuries and illness reported. All injuries and illnesses must be reported, but not all injuries and illness are included in the record.

Those that put into the records of injuries and illnesses are accidents that cause Death/fatality, Loss of workdays/ Loss Time Incident, Restricted Working Day (limited work or transfer to other simpler jobs), Medical Treatment or loss of consciousness. Meanwhile, events that result first aid are only reported. In PTM, especially in the Drilling and Well Intervention division, HSSE performance broadly follows the OSHA standard, which is divided into 2, namely Recordable and Reportable.

The Reportable incident consists of:

1. Unsafe Act is all actions that are unsafe and dangerous to the workers.
2. Unsafe conditions are all unsafe and dangerous circumstances and condition to the workers.

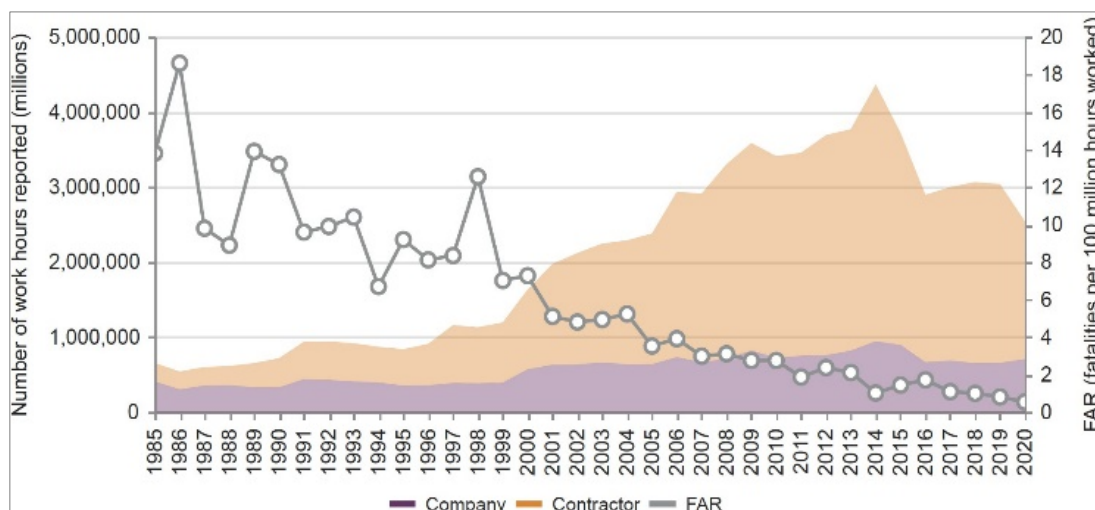


Fig. 2. Reported work hours and fatal accident rate (1985-2021).
Source: IOGP Annual Performance Report 2021.

3. Near miss Incident is an unplanned event that does not result in injury, illness or property damage but has the potential to cause losses.
4. First aid is a case of an occupational accident where for the treatment does not require treatment from professional medical personnel, just first aider.
5. Medical Treatment Cases are cases of work accidents where the treatment action requires treatment from medical professionals.
6. Restricted Working Day Case (RWDC) is a case of a work accident in which the injured person cannot fully do the work he previously worked for (working with a simpler job).
7. Loss Time Incident (LTI) is a case of work accident where the injured person cannot return to work for some time/day.
8. Fatality cases are cases of work accidents that cause the affected person to experience death.

From the various HSSE performance data above, those included in the recordable injury category are near miss Incident, RWDC, LTI and Fatality.

Since 2015, when working area was managed by previous company, a safety slogan was launched. The background was because of the high LTI numbers that occur every year. This slogan was becoming an objective that must be carried out by all workers in the working area, especially in the Drilling and Well Intervention divisions. By implementing that slogan as an objective, the company at that time succeed managed the LTI case reduced, even more than 2.5 years without LTI.

When the management of the Area was taken over by PTM, this safety slogan also continued to be carried out for work operations. However, the reverberations are no longer same as when it was run in the old operator. Although until the end of 2021 after 3 years of being transferred to PTM, the case of loss of working days (LTI) is still zero, but there have been several accidents that have occurred at the same level as MTC and RWDC which have the potential to cause LTI.

In fact, there have also been violations of HSSE in the field that lead to the neglect of dangers, for example, cases of smoking in oil and gas platform. When confronted with the perpetrators of violations, there are indications of some workers' understanding that the safety culture at PTM is lower compared to the previous company.

The above concern at the end will create the accident, not only will affect to the Lost Time incident but the worst, I could cause fatality incident. This condition will create loss to the company. The loss not only direct cost such as medical expenses or repair / replace the damage. But higher is indirect costs such as lost supervisory time, co-workers lost time during emergency, damage equipment, payment made to injured under benefit program. Also, public image which can affect to the share price. The phenomena are like tip of iceberg theory. Even if the accident that occurs is a major accident such as blow out, the losses will be even greater.

High Potential (HIPO) Incident and recordable injury root causes which got from incidents investigation in 2022 shown that the higher factor is human factors (53.8%), followed with Job Factors (38.5%). The specific human factors which became root cause of the accident is abuse and bad behavior. From that fact, it is needed to know about safety culture in the Drilling and Well Intervention

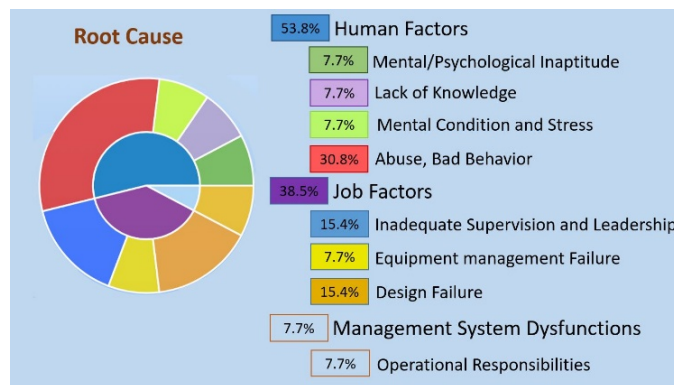


Fig. 3. HiPo & recordable Injury Root cause.
Source: PTM data, 2022.

III. METHODOLOGY

The research was conducted on the employee of Drilling and Well intervention in PTM. The respondent who received the questionnaire and filled it came from the frontline of the operation, who working on barge, rig or site base with vary experience years. They were who face directly with the operation and have the risk to get the incident. The research was conduct by using filling out questionnaire ad studying literature. The questionnaire is created to know what were the frontline employee understanding, and opinion regarding the question asked.

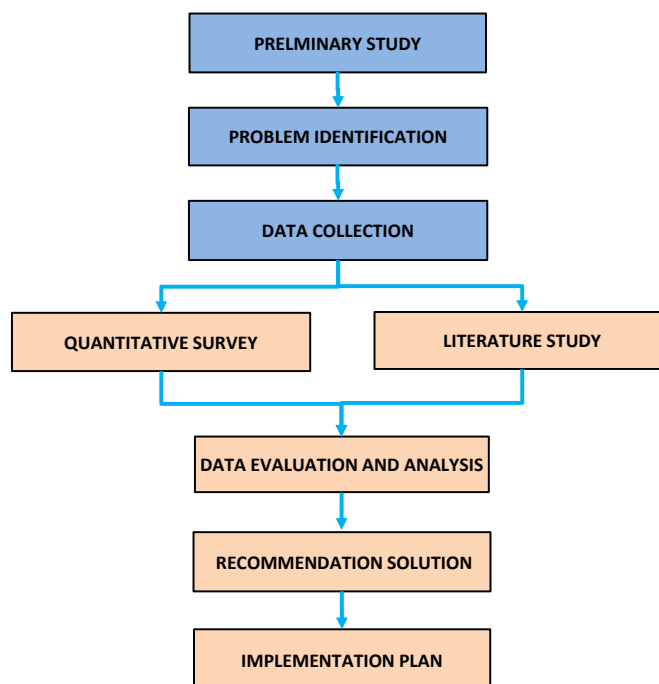


Fig. 4. Research Methodology.
Source: Author, 2022.

A. Data Collection

In the research process, data is an element factor. The data is collected to measure the information about the variables to be studied, test hypotheses and result evaluation. Data is raw material that needs to be processed to produce information or information, both qualitative and quantitative that show facts or can also be defined as data is a collection of facts or figures or anything that can be trusted to be true so that it can be used as a basis for taking a conclusion (Siregar, 2013).

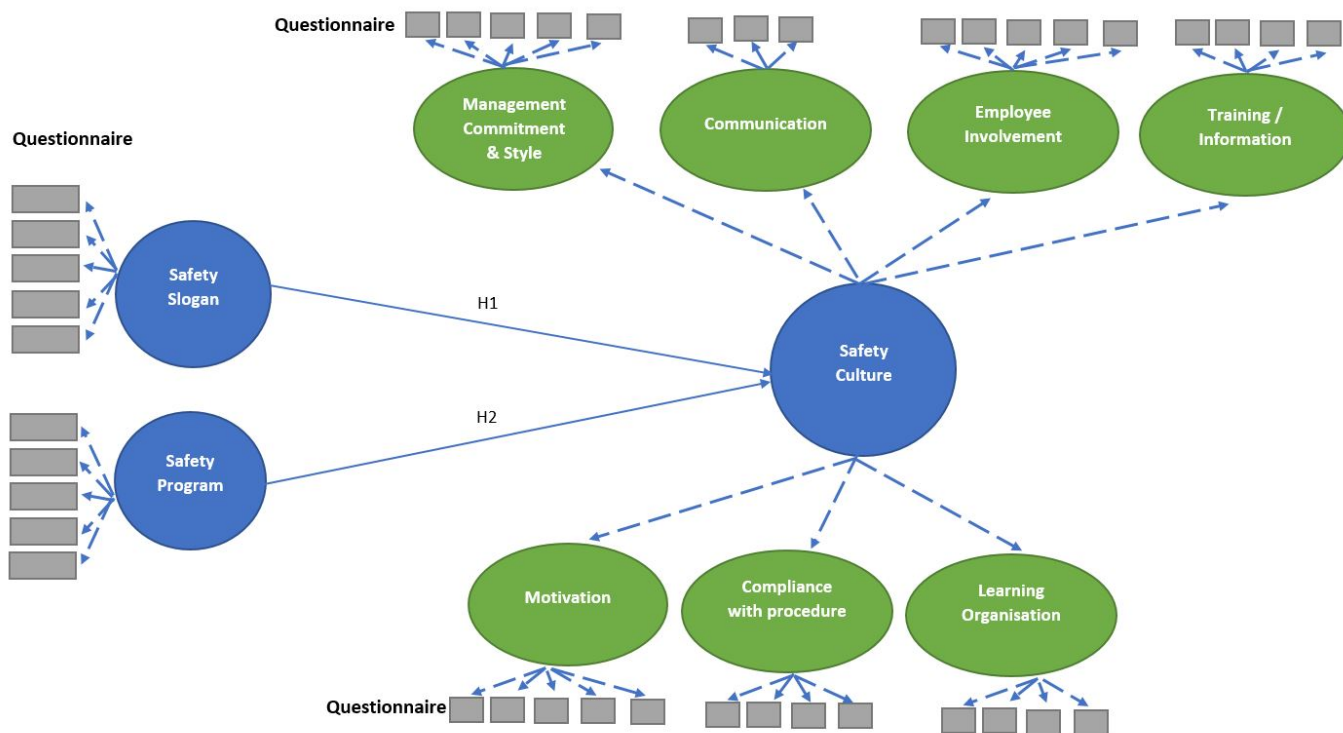


Fig. 4. Model of Questionnaire.

The type of data sources is obtained in both form of primary data and secondary data. Primary data is data which is collected directly from the original source by giving questions through a questionnaire to research respondents. The Secondary data is data collected not directly from the source. The questionnaire is used as quantitative research, to obtain an overall profile by calculating the frequency of appearance of opinions, attitudes, behavior or predictions, experiences, and process. The respondent will receive questions and be asked to answer them about facts, beliefs, behaviors, and experience as an employee who work on drilling or well intervention operation in Mahakam area. The questionnaires were sent to the respondent using office form and distributed via WhatsApp group and email. The questionnaire was created using Likert scale in 1-4 intervals.

The Likert scale is a scale that can be used to measure a person’s attitude, opinion, and perception about a certain object or phenomenon (Siregar, 2013). The questionnaire used the combination of question that have been published in the journals and the dependent variable on safety culture and safety management system using 4 (four) indicators according to Chyung (2017).

The Likert scale which used without using midpoint, so there was no neutral opinion between disagreement on one side and agreement on the other. Likert scale without midpoint is also characterized as forced-choice scale, as respondents are forced to choose either a disagreement or agreement option (Chyung *et al.*, 2017). Another concern why not using a midpoint, because the respondent may use a midpoint as a dumping ground when they are responding to the survey items that are unfamiliar to them, or items that are ambiguous or socially undesirable. The four-point scale which used are Strongly Disagree.

B. Data Sample

To ensure good quality statistical analysis, there are minimum sample requirements that must be met. The first is

a minimum sample according to the criteria of the tools used by PLS-SEM and a minimum sample according to the ratio of the total population. The minimum sample base on standard PLS-SEM is 10 times the maximum number of arrowheads pointing at the latent variable anywhere in the PLS path model (Hair, et al., 2017). From the model of questionnaire, there are 2 arrows pointing to the latent variable. By using the table in PLS path model, the number of samples required for the research to obtain 80% statistical power, 5% significance and to able to detect R2 with a value of 0.1 is 110 samples.

The second minimum sample size test that was carried out was to determine the ratio of the population and sample using the Slovin formula (Ridwan, 2015), given in (1).

$$n = \frac{N}{1+Ne^2} \tag{1}$$

where,
 n: sample size / number of respondents
 N: Population size
 e: The allowable percentage of sampling error accuracy is tolerable:
 e = 0.1 (10%)
 By using (1), the data are:
 N: 2500
 e: 0.05 (5%)

Using (1), we find the sample size;

$$n = \frac{2500}{1 + 2500 (0.05)^2}$$

$$n = 334 \text{ sample}$$

C. Variables

In this research, the Safety Slogan, Safety Program and Safety Culture became Latent variables with high abstraction, there are other latent variables with lower abstraction they are management commitment and style, communication, employee involvement, Training and competence, motivation, compliance with procedure and organization learning.

The questionnaire was given to both latent variables with high abstraction and latent variables with lower abstraction. The total question is 40 questions, consist of: Safety slogan (5), Safety Program (5), Management commitment & style (5), communication (3), employee involvement (5), Training and competence (4), motivation (5), compliance with procedure (4) and organization learning (4) questions.

IV. BUSINESS SOLUTION

The research which done by questionnaire method carried out to the 2500 employee. By using (1), with error rate 5% (0.05), the minimum sample which shall be taken is 334 employees. The number employee who responds the questionnaire is 378 employee which mean more than minimum number. The data then processed and analyzed.

A. Data Analysis

The result of questionnaire research shown that the safety culture already good but the room for improvement is still available. The management of Drilling and well Intervention still can increase the safety culture of the employee by implement some implementation plan described in Section IV. The main key is the management commitment by giving exemplary behaviour to the employee. Involved employees in implementing the program and ask for feedback. Give detailed explanation of company policies, with the purpose the employee knows and understand the company goal and objective such as the Zero LTI. No less important give awards to the employees who achieved the goals and take firm action for those who violate the policies and the rule. In the end, the safety culture among employees and the organization increased and accident can be prevented.

From the results of questionnaire, based on working location the respondent 199 (53%) working on drilling rig, 151 (40%) working on Well Intervention barges and 28 (7%) working on site base. Base on working position 37 (10%) working in upper level, 139 (37%) in the middle level and 202(53%) in lower level. The criteria also based on working years' experience. And the result is 49 (13%) working experience below 1 year, 241 (64%) working experience 1-5 years, 49 (13%) has working experience 6-10 years, 25 (7%) has working experience 11-15 years, and 14 (4%) has working experience above 15 years.

1) Quality assessment

The questionnaire results then tested to see measuring the relationship between latent variables. Before that it is necessary to test the quality of observable indicators. There are four criteria that can be used to detect errors in observable indicators: indicator reliability, internal consistency reliability, convergent validity, and determinant validity (Hair *et al.*, 2017).

The data processed using PLS-SEM shown that the outer loading value is greater than 0.4, mean that all the indicators are reliable in the indicator reliability criteria. For internal consistency reliability, the value of Cronbach alpha is more than 0.6 which mean that all the data reliable as shown in Table I.

TABLE I: INTERNAL CONSISTENCY RELIABILITY

Construct	Cronbach Alpha	Composite reliability	Result
Safety Slogan	0.883	0.891	Reliable
Safety Program	0.879	0.880	Reliable
Management Commitment & Style	0.866	0.879	Reliable
Communication	0.741	0.766	Reliable
Employee Involvement	0.798	0.801	Reliable
Training and Competence	0.882	0.883	Reliable
Motivation	0.796	0.801	Reliable
Compliance with procedure	0.845	0.848	Reliable
Organization Learning	0.867	0.868	Reliable

Table II show the value of the Average Variance Extracted of all variables is above 0.5 which mean that it is declared valid.

TABLE II: CONVERGENT VALIDITY

Construct	Average Variance Extracted (AVE)	Result
Safety Slogan	0.684	Valid
Safety Program	0.734	Valid
Management Commitment & Style	0.657	Valid
Communication	0.660	Valid
Employee Involvement	0.623	Valid
Training and Competence	0.738	Valid
Motivation	0.620	Valid
Compliance with procedure	0.763	Valid
Organization Learning	0.715	Valid

2) R² Rating

R² is used to measure how high the prediction accuracy of the measurement model is and represents how much variance can be explained by the endogenous construct. The R² value varies from 0 to 1. Each field of science has a different R² standard, for example in the field of marketing 0.75 has a significant effect, 0.5 is moderate and 0.25 is small, while a value of 0.2 is high in the field of customer behaviour (Hair, *et al.*, 2017). Whereas for this research that falls into the category of organizational behavior, the standard used is the recommendation from Cohen (1988), who states that a value of 0.25 has a significant effect, 0.09 is moderate and 0.01 is small.

The R² value of Safety Culture of 0.721 indicates that the Safety Program and Safety Slogan can explain 72.1% of the variance of Safety Culture. The value of 0.721 is also greater than 0.25 standard of Cohen (1988). So, it can be concluded that the effect of the construct is large enough so that the survey respondents can directly feel the effect of the Safety Culture.

TABLE III: R² RATING

Construct	Coefficient of Determination (R ²)
Safety Culture	0.721

3) Hypothesis testing

This hypotheses testing, to see the connection between independent variable and dependent variable.

Table IV shows that all the relationships between the independent variable and the dependent variable are positive and significant with a value of $t > 1.96$, $P < 0.05$ (Hair *et al.*, 2017), so it can be concluded that all hypotheses are accepted (Hypotheses Supported).

TABLE IV: HYPOTHESIS TESTING

	Path	Path Coefficient	t-value	P-value	Hypothesis
H1	SS→SC	0.386	5.895*	0.00	Supported
H2	SP→SC	0.504	7.846*	0.00	Supported

a) Influence of safety slogan on safety culture

Hypotheses 1 (H1) is represented by positive relationship between Safety Slogan and Safety Culture, as shown in Table IV, the path coefficient (0.386) is positive, the t-value (5.895) is greater than 1.96, and the P-value (0.000) indicated that P-value is very small. Based on the three result above, it can be concluded that hypothesis 1 is accepted (Hypotheses 1 Supported) or The Safety Slogans influence the Safety Culture.

b) Influence of safety program on safety culture

Hypotheses 2 (H2) is represented by positive relationship between Safety Program and Safety Culture, as shown in the Table IV, the path coefficient (0.504) is positive, the t-value (7.846) is greater than 1.96, and the P-value (0.000) indicated that P-value is very small. Based on the three result above, it can be concluded that hypothesis 2 is accepted (Hypotheses 2 Supported) or The Safety Program influence the Safety Culture.

After comparing the path coefficient value between two hypotheses, and the largest is value of the relationship between hypotheses 2, it can be concluded that the most important construct (key Construct) in this research model is the Safety Program. So, the safety program more influence to the safety culture compare to safety slogan

B. Proposed Solution

Based on the analysis data, the Safety Culture of the employee is good and the safety Slogan and Safety program have influence to safety culture itself. The good safety culture will be prevented accident occur. Even though the safety culture already good, the research question also shown the opinion regarding safety slogan and safety program that can be improved. Below are proposed solution to handle some issue regarding human error and increase the safety culture.

1) Safety slogan

- Asking management to have strong commitment to put the slogan as objective of the organization and consistently socialize and promote it during all level and type of safety meeting, and during management visit.
- Create commitment board regarding safety slogan which signed by management and all leaders in drilling and well intervention.

2) Safety program

- Asking the teams to optimizing the implementation of all the safety program.
- Merge some safety program with similar purpose into one program.

The others proposal safety program as per factors which forming safety culture are:

- Management commitment & style
 - Create management commitment board which sign by all the leader, distribute the management commitment board to be displayed on the rigs and barges.
 - Management visit to the rigs or barges by assistant manager and manager quarterly and management visit by engineer and analysis to the rigs and barges semesterly.
- Communication
 - Encourage all the frontliner to speak up if found the unsafe condition or unsafe act, and all the report are received by management and be followed up.
- Employee involvement
 - Encourage all the frontline to be involve in safety leader program which every employee will be act as safety leader in weekly rotation in each working area.
 - Create mobile application for reporting unsafe condition or unsafe act which can be accessed directly from each gadget of the employee.
 - Held safety workshop and forum group discussion with frontline employee as the participant.
- Training & Competence
 - Ensure all the frontline employee already met the qualification as per training matrix of their position.
 - Proposed special training for some position as per their expertise, so the drilling and well intervention operation will be done in efficient and safe manner.
- Motivation
 - Choses some criteria from the activity and gave reward for the best one.
 - Give souvenirs or reward to the employee during management visit during discussion.
 - Give special reward if the objective target achieved in certain time period.
- Compliance with procedure
 - Developed Artificial Intelligence by using CCTV in some main area of the rigs and barges to ensure all the employee comply with procedure to wear appropriate personal protective equipment (PPE).
- Learning Organization
 - Developed learning system in digital as part of knowledge management, where the employee easily can access document regarding HSSE.

V. CONCLUSION AND RECOMMENDATIONS

A. Conclusion

The result of research questionnaire which conducted quantitatively conclude some explanation to answer the research question. They are:

1. PTM has safety slogan which implement in Drilling and Well Intervention Division. This slogan and safety program which implement in the division influence the safety culture of the employee. The safety culture existing in the drilling and well intervention division of PT M is already good. This is shown from the result of questionnaire which answer by the respondent. The result of seven indicators shown value above 0.4 for reliability, Cronbach alpha above 0.6 for internal reliability. For internal consistency reliability the value of Cronbach alpha is 0.962 above 0.6 which indicate that it is reliable. For convergent validity, the AVE value is 0.521 above 0.4 that indicate that the safety culture is valid. The result is also inline to the result of Cultural Survey conducted at PTM in 2021 with result 4.25 (scale 5).
2. The safety slogan which had by PTM as per research result have connection to the safety culture of the employee especially in Drilling and Well Intervention Operation. The safety Slogan influence the safety culture, this is shown by the result of data process and analyses from the research questionnaire. The result of relationship between safety slogan and safety culture shown the patch coefficient is positive with value 0.386, the t-value is 5.895 higher than 1.96, and the v-value is 0 that indicated very small value. So, the hypothesis concludes that the safety slogan is proven influence the safety culture.
3. The result of the research question shown that almost the respondent answer that the safety programs which run in Drilling and Well Intervention operation already well, but need to optimize the implementation. There is suggestion that safety program with similar purpose can be merge to be one program. The process and analyse data shown that Safety Program has relationship with the safety culture of the employee. The result of path coefficient is positive with value 0.504, the t-value is 7.846 higher than 1.96, and the P-value is 0 which is very small. So, the hypothesis concludes that the safety program is proven influence the safety culture.
4. The result of Safety Program is higher than safety slogan. It is concluded that Safety Program influence safety culture more than safety slogan influence the safety culture.

B. Recommendation

The result of questionnaire research shown that the safety culture already good but the room for improvement is still available. The management of Drilling and well Intervention still can increase the safety culture of the employee by implement some implementation plan which described in business solution. The main key is the management commitment by giving exemplary behaviour to the employee. Involved employees in implementing the program and ask for feedback. Give detailed explanation of company policies, with the purpose the employee knows and understand the

company goal and objective such as the Zero Loss Time Incident (LTI). No less important give awards to the employees who achieved the goals and take firm action for those who violate the policies and the rule. In the end, the safety culture among employees and the organization increased and accident can be prevented.

REFERENCES

- Alkhadi, M., Pathirage, C., Kulatunga, U. (2017). *The Role of Human error in accidents within oil and gas industry in Bahrain*. University of Salford.
- Antonsen, S. (2009). *Safety Culture – Culture, Method, and improvement*. NTNU Social Research Ltd, Norway.
- Biddison, E. L. D., Paine, L., Murakami, P., Herzke, C., Weaver, S. J. (2015). Associations between safety culture and employee engagement over time: a retrospective analysis. *Quality Safety Journal*, 3.
- Bisbey M. Tiffany, Kilcullen P. Molly (2019). Safety Culture: An Integration of Existing Models and a Framework for Understanding Its Development, how is safety culture adopted by employee? *Human Factors and Ergonomic Society*, 94-96, 100.
- Catino, M., Patriota, G., (2013). Learning from Errors: Cognition, Emotions and Safety Culture in The Italian Air Force, *Journal Sagepub*, 437.
- Chauhan, N., (2013). *Safety Health Management System in Oil and Gas Industry*, Wipro. Ltd.
- Chyung, S. Y., Roberts, K., Swanson, I., Hankinson, A. (2017). Evidence-Based Survey Design: The use of a midpoint on the likert scale. *Performance Improvement*, 2-11.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ, Lawrence Erlbaum Associates.
- Cohen, L., Manion, L., (1980). *Research Method in educations*. Groom Helm Ltd,
- Cresswell. J.W. (2008). *Research design – qualitative, quantitative, and mixed method approaches*, SAGE Publications.
- Crutchfield, N., Roughton, J. (2014). An Innovative Leadership Approach, Leadership and the effective safety culture, *Safety Culture* (3), 131 – 156. <http://dx.doi.org/10.1016/B978-0-12-396496-0.00007-0>.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Los Angeles: Sage.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Andover, Hampshire: Cengage.
- Hughes, P., Ferret, Ed., (2016). *Introduction to Health and Safety at Work (6th Edition)*, The handbook for NEBOSH.
- Kurniawan, A. W., Puspitaningtyas, Z., (2016). *Quantitative Research Method, Understanding of research variables*, Pandiva Buku.
- Kohli, C., Leuthesser, L., Suri, R. (2007). Got Slogan? Guidelines for creating Effective Slogans. *Elsevier Journal*, 415-422.
- Leonard, M., Frankel, A. (2012). How can leaders influence a safety culture? *Thought paper*, 4.
- Lukman, M. A. (2021). *Safety Faq – 1001 questions and answers about safety*. Dandelion Publisher.
- Naji, G.M.A, Isha, A.S.N, Al-Mekhlafi, A.B.A, Sharafudin, O., Ajmal, M. (2020). Implementation of Leading and Lagging Indicators to improve safety Performance in The Upstream Oil and Gas Industry. *Journal of Critical Reviews*, 1-6.
- R.M. Choundhry, D. Fang, S, Mohamed (2006). The nature of Safety Culture – A Survey of the state of the art, *Elsevier Journal*, 1-8
- Schein, E.H (2017). *Organizational Culture and Leadership, How Culture begins and the role of the founder of organizations*. Canada: John Wiley & Sons, Inc.
- Shuen, Y.S., Abdul Wahab, S.R. (2016). The Mediating of Safety Culture on safety communication and Human factor Accident at the workplace. *Asian Social Science*, 130-131.
- Sinambela, L. P. (2013). *Quantitative Research Method. Research Basic Concept*, Graha Ilmu Publisher.
- Tjakraatmadja, J. H., Kristinawati. D. (2017). *Implementation Strategy of Knowledge management, Knowledge management and its characteristic*. Bandung Institute of Technology Publisher.
- Vecchio-Sadus, A. M. (2007). Enhancing Safety Culture Through Effective Communication. *Safety Science Monitor*, 1-9.
- Yusuf, M. (2014). *Research Method-Quantitative, Qualitative and Mixed Method: Nature, Function, and Research Process*. Kencana Prenadamedia Group.
- Organization Culture (n.d.) *Health and Safety Executive*. Retrieved from: <https://www.hse.gov.uk/humanfactors/topics/culture.htm>. Downloaded on August 12, 2022.