Effect of safety climate relationship, and organizational culture on compliance regulation safety rules

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Abstract. Industry competition force companies to compete by optimizing their resources. The use of modern equipment is used to improve the productivity of the company to achieve effectiveness and efficiency. Reliable workforce needed to operate and support the running of modern equipment can meet the desired targets. In the operation of modern equipment it poses a risk of safety hazards and occupational health for the workforce. This risk can threaten the workforce at work, so special attention is needed by all concerned parties such as labor, companies and government.

1. Introduction

Indonesia is one of the developing countries where there are many high risk work activities. The Social Security Administering Body (BPJS) estimates that every day six workers die at work. On average, every year there are 98,000-100,000 cases of occupational accidents and 2400 cases of which result in death. By 2015 the number of occupational accidents has reached 105,182 cases and 2,375 cases have resulted in the loss of workers' lives. The high rate of accident statistics that resulted is very important to investigate the factors affecting accidents in order to protect workers. Work accident alone can be defined as an event that arises as a result of a series of jobs that can cause death (fatal) as well as injuries (non-fatal). Work accidents can be classified into five main types of falling from a height, electric shock, fire or explosion, crashing or falling objects and trapped between something (1).

2. Climate Safety, Organizational Culture and Compliance safety regulations

The safety climate is defined as the employee's perception of safety policies, procedures, practices, and all the safety interests and priorities (2). The safety climate itself can be analogous to measuring the safety temperature of an organization (3), which shows the "state of safety" of an organization at any given time (4). Based on previous study conducted by (5), it is known that there is a significant correlation between the safety climates to worker safety behaviour. However, (6) have failed to find an association between safety climates with safety behaviour. In this study, researchers have the following hypotheses: H1 = Safety Climate has a relationship with Safety regulatory compliance.

Robbins (7) state that organizational culture is a system of shared meanings embraced by members of the organization that distinguishes the organization is different from other organizations. According to (8), organizational culture has three levels, namely Artifacts (artifacts) which is the highest cultural level consisting of aspects that are visibly visible, visible, and felt by people outside the organization. Organizational culture has several functions (7) i.e. culture creates a clear distinction between one organization with another organization, the culture provides an identity for members of the organization, the culture facilitates the emergence of a wider commitment and on the individual's interest, The stability of social systems, culture as the mechanisms of meaning and control that guide and shape attitudes and behavior of employees.

Schein (8) in Martinez et al (9) argues that when organizational culture has existed and is inherent, it will determine the perceptions, feelings, ideas of the organization and the behavior of its members. According to Clarke (10), the behavior patterns of workers are influenced by the perception of workers who focus on safety, when the existing safety culture of the company is strong [10]. So in this research has hypotheses as follows: H2 = Organizational Culture has a positive effect on company regulatory compliance.

3. Climate Safety and Organizational Culture

The safety climate itself can be analogous to measuring the safety temperature of an organization (3) which shows the "state of safety" of an organization at any given time (4). Based on the literature review there has been no research on safety climate relationship with organizational culture in pertamina lubricant industry context. Thus, the researchers wanted to know the relationship, the researchers have the following hypothesis.H3 = Climate safety has a relationship with Organizational Culture. Based on the research hypothesis in the above description, it can be made a research framework as illustrated in figure 1.

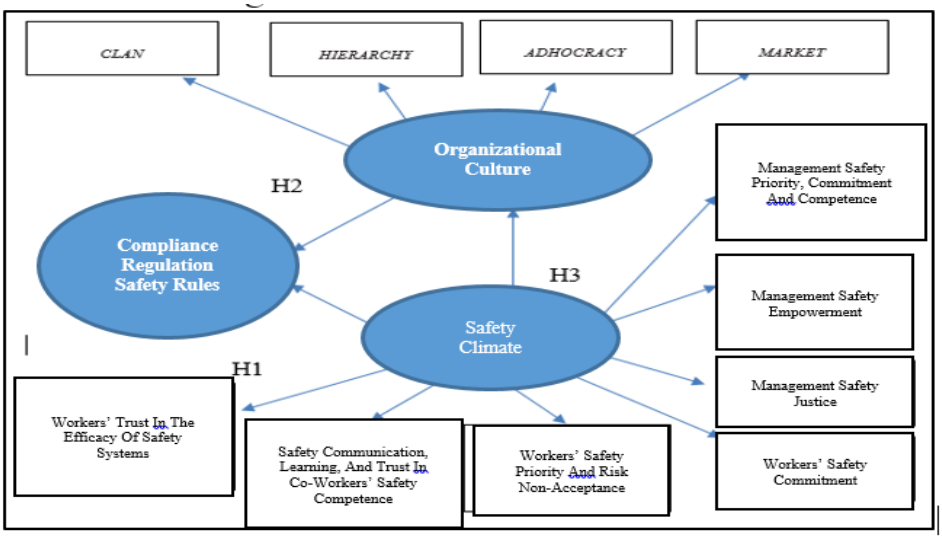

Figure 1. Research Framework.

4. Analysis of Structural Equation Model (SEM)

The analysis begins by looking at the relationship between safety climate and organizational culture to the compliance of safety regulations. Tests conducted to identify the size of the influence between variables and levels of significance between variables. The magnitude of influence between variables can be seen in the loading factor value in standardized estimates. The greater the value of the relationship between constructs the influence between the variables the better. Then significance between variables can be seen based on value $\chi 2$ (chi-square) / df. The overall test results of construct variables can be seen in figure 2 below.

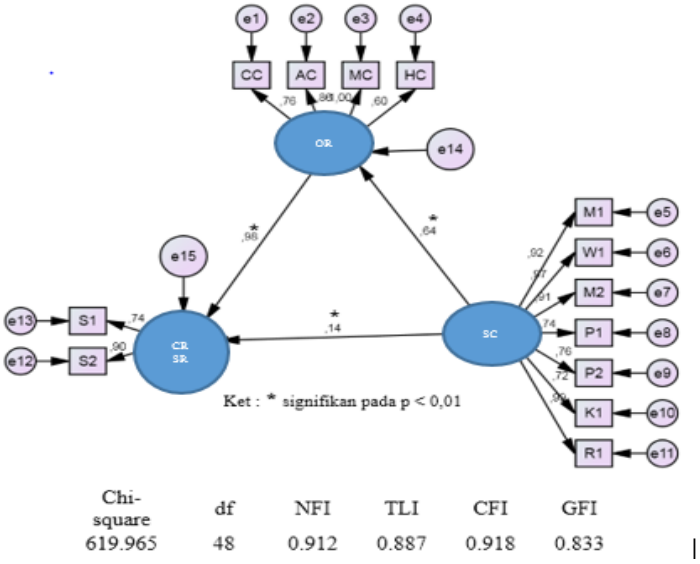

Figure 2. Structural Model.

Based on figure 2, Goodness of Fit on SEM result from AMOS processing obtained value $\chi 2$ (chi-square) / df equal to 12,91 is large enough ($\leq$ 3) between variables which mean model not fit yet. Furthermore, the NFI value is 0.912 (0.90-0.95), the value of TLI is 0.887 ($\geq$0.90), the value of CFI is 0.918 ($\geq$0.90), and the GFI value is quite high at 0.996 ($\geq$0, 90) to show that the hypothesis model is fit. The factor loading value on each construct is good ($\geq$ 0,50) and can be seen in Table 1. The resulting loading factor is high enough (> 0.5) so it can be said that the formation of the model has been stable and can support the measurement of validity and reliability. The results of the calculation of Construct Reliability can be seen in Table 2.

Table 1. Standardized Factor Loading Structural Model

Indicator	Construct	*Factor Loading* SEM
M1	Safety Climate	0.92
W1		0.97
M2		0.91
P1		0.74
P2		0.76
K1		0.72
R1		0.99
CC	Organizational culture	0.76
AC		0.86
MC		1.00
HC		0.60
S1	Safety Regulatory Compliance	0.74
S2		0.90

Table 2. Reliability constructs result from SEM

Construct	(*Sum of Standarized Loading*)^2	*Sum of Measurement Error*	*Construct Reliability (CR)*

Safety Climate	7.17	0.61	0.92
Organizational Culture	13.16	0.70	0.95
Safety Regulatory Compliance	2.70	0.65	0.81

From the table above note that the value of CR obtained more 0.7. The limit value used to assess the level of reliability received is 0.70 (11). So it can be said that the constructs in this structural model can be relied upon.

5. Hypothesis Testing

Furthermore, that is testing the research hypothesis based on the results of structural testing model. Table 3 below shows the hypothesis conclusions based on the significant value of P value.

Table 3. Conclusion Hypothesis

Hypothesis	Statement	Estimates (Λ)	P_Value	Decision
H_1	The Safety Climate positively affects Safety Regulatory Compliance	0.144	p < 0.01	Signifikan
H_2	Organizational culture has a positive effect on Safety Regulatory Compliance	0.981	p < 0.01	Signifikan
H_3	The Safety Climate positively affects Organizational Culture.	0.639	p < 0.01	Signifikan

Based on Table 3, it shows that hypothesis 1, hypothesis 2, and hypothesis 3 are significant and can be interpreted construct variable has positive and significant effect on pvalue <0,01.

6. Safety Climate Relationship with Safety Regulatory Compliance

Based on the results of hypothesis 1 of the analysis it is known that there is a relationship between the safety climate with the compliance of safety regulations. The standardize estimated value produced was 0.144 (p <0.01) indicating a significant relationship between the safety climate for safety regulation compliance. This supports previous literature studies showing the relationship between the safety climate and compliance with safety regulations.

7. Organization Cultural Relations with Safety Regulatory Compliance.

Based on the results of hypothesis 2 from the analysis SEM it is known that there is a relationship between organizational culture with the compliance of safety regulations. The resulting standardize estimates value is 0.981 (p <0.01) indicating that there is a significant relationship between the organizational culture on the compliance of safety regulations. This supports previous literature studies showing the relationship between organizational culture and compliance with safety regulations. Climate Safety Relation with Organizational Culture Based on the results of hypothesis 3 of the analysis SEM it is known that there is a relationship between the safety climate with organizational culture. The resulting standardize estimates value is 0.639 (p <0.01) indicating a significant relationship between the safety climate and the organizational culture. Based on the literature review there has been no research on safety climate relationship with organizational culture

in the industry. The result of hypothesis 3 can be concluded that the safety climate has significant effect on organizational culture.

8. Conclusion and Recommendations

This research was conducted by distributing questionnaires in PT PERTAMINA LUBRICANT with total of 500 respondents. The result of fit model analysis shows that the resulting model is fit because it meets the cut of value. From Hypothesis Analysis that will answer from formulation and purpose of this research, among others:

- Based on result of hypothesis 1 of SEM analysis known that there is relation between Climate Safety with Compliance Regulation of Safety. The resulting Standardize estimated value is 0.144 ($p < 0.01$) indicating a significant relationship between the safety climate and the safety regulations.
- Based on the results of hypothesis 2 of SEM analysis known that there is a relationship between the Organization Culture with Compliance Safety Regulation. The resulting Standardize estimates value is 0.981 ($p < 0.01$) indicating a significant relationship between the organizational culture on safety compliance.
- Based on the results of hypothesis 3 of SEM analysis known that there is a relationship between Climate Safety with Organizational Culture. The resulting Standardize estimated value is 0.639 ($p < 0.01$) indicating that there is a significant relationship between the safety climate to the organizational culture.

Here are suggestions for further research

- This research can be used as a reference for other research that will conduct research in Influence of Climate Relation Safety and Culture Organization to Compliance Regulation of safety
- The advantages and disadvantages shown in the model can be used as a reference to develop conceptual model in the next research.
- For further research, in order to add other latent variables.
- For further research in order to make comparisons on other types of industries.
- To maintain compliance with high safety regulations, a management role is needed to lead a culture of change. The company enforces safety as an organizational culture for safety behavior to be sustainable.

9. References

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