International Journal of Business and Applied Economics (IJBAE)
Vol. 4, No. 4, 2025: 1723-1742

The Effect of Safety Culture on Safety Performance through Mediation of Psychosocial Hazards at PT. XYZ

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A R T I C L E I N F O

Keywords: Safety Culture, Psychosocial Hazards, Safety Performance

Received : 4, June
Revised : 20, June
Accepted: 22, July

A B S T R A C T

Safety performance is a key indicator in occupational safety management. This study examines the influence of safety culture and psychosocial hazards on safety performance, by incorporating a new dimension, namely safety compliance and safety participation. The study was conducted on PT XYZ, the largest gas subholding in Indonesia, with 210 respondents (organic, non-organic, and contractor employees) using stratified random sampling techniques. Data was collected through a 5-point Likert scale questionnaire and analyzed using SEM-PLS (SmartPLS). The results show that safety culture has a positive and significant effect on psychosocial hazards and safety performance. Psychosocial hazards also have a positive effect on safety performance and mediate the relationship between safety culture and safety performance. These findings imply that improving safety culture and managing psychosocial factors can improve safety performance in companies.

DOI: https://doi.org/10.55927/ijbae.v4i4.192
ISSN-E: 2963-6124
https://nblformosapublisher.org/index.php/ijbae

INTRODUCTION

The natural gas industry in Indonesia has a very strategic role to support national economic growth. Natural gas has been used as one of the main energies for the industrial, power generation, commercial, manufacturing and transportation sectors. The natural gas industry in Indonesia has experienced various challenges in the last 5 (five) years. The use of domestic natural gas has increased to 67.08% with a total distribution until the end of 2024 of 1,904.57 BBTU (billion British thermal units) based on data from the 2024 performance report of the Ministry of Energy and Human Resources (EMR).

PT XYZ is a company that plays an important role in the distribution and transportation of natural gas in Indonesia. PT XYZ controls 91% of the domestic natural gas utilization market share and manages more than 33 thousand kilometers of natural gas pipeline network and operates 95% of the downstream natural gas infrastructure spread across 17 and 830,000 customers throughout Indonesia based on the data of the 2024 Sustainability Report (PT Perusahaan Gas Negara, 2025). PT XYZ runs the gas business in the fields of midstream, downstream, and natural gas support businesses in Indonesia, and has transformed into a gas subholding, as part of the Oil and Gas Holding in Indonesia.

One of the important aspects to maintain PT XYZ's performance is maintaining energy sovereignty, namely the application of strict oil and gas industry safety principles. The safety of natural gas distribution is a top priority for PT XYZ considering the high risks associated with natural gas distribution and transportation operations. PT XYZ has achieved more than 490 million safe working hours and won 18 oil and gas safety awards by 2024. This award was given by the Ministry of Energy and Mineral Resources (EMR) as a form of appreciation for PGN's commitment to implementing an effective occupational safety management system based on data (PT Perusahaan Gas Negara, 2025).

PT XYZ continues to innovate to develop technologies, methods, and systems to support the improvement of safety performance, including through the innovation of the application of automatic monitoring and control technology on the bum gas pipeline network in order to be able to detect early potential leaks and safety incidents; as well as the procurement of routine occupational safety training for all workers to have the necessary knowledge and skills in dealing with emergency situations. PT XYZ strives to create superior human resources and ensure the safety of its workers to face fierce competition in the natural gas industry.

PT XYZ's success in achieving the company's performance in fierce competition in the natural gas industry is determined by effective human resources, because human resources have a major role in the activities of the organization or work. The assessment of human resources can be seen from their productivity at work, so it can be said that effective human resources produce good work productivity. Human resources (HR) are very important in a company that can be control, company defense, and company development in the face of all forms of demands. Well-managed human resources will be able to provide a competitive advantage for the company, which means that human

resources greatly determine the survival of the organization (Saptari & Dudija, 2024). Therefore, good human resource management is very important in improving company performance.

LITERATURE REVIEW

Safety Culture

The concept of safety culture was first introduced after the Chernobyl accident in 1986 (Wachter & Yorio, 2014). Cooper (2002) defines safety culture as a collection of beliefs, norms, attitudes, roles, and practices that aim to minimize exposure to hazards in the work environment. Safety culture reflects the character of an organization in promoting occupational safety (Guldenmund, n.d.) and consists of three main dimensions: management commitment, work environment, and involvement (Naji et al., 2021).

Psychosocial Hazards

Psychosocial hazards are psychosocial hazards in the workplace that can affect the psychological condition of workers and their performance (Chirico et al., 2019). Risk factors include workload, work control, social support, role conflicts, role ambiguity, and work-life balance (Ganzeboom & Treiman, 1992; Kortum et al., 2011). Poorly managed psychosocial hazards can increase work stress, which ultimately negatively impacts safety and productivity (Liu et al., 2020).

Safety Performance

Safety performance is an indicator of the effectiveness of the implementation of a safety management system in the workplace (Cheng-Chia Yang et al., 2009). According to Naji et al. (2021), the safety performance dimension includes safety compliance (worker compliance with safety procedures), safety participation (active participation in safety activities), and leading and lagging indicators. Leading indicators focus on prevention, while lagging evaluates safety outcomes based on incidents that have occurred (Versteeg et al., 2019; Bunner et al., 2018).

Relationships Between Variables

Previous research has shown that a positive safety culture can reduce the level of psychosocial hazards (Wilkinson & Lewis, 2008; Naji et al., 2021), which in turn has a positive impact on safety performance (Neal et al., 2000). In addition, there is a direct influence of safety culture on safety performance (Mearns et al., 2003; Wadsworth & Smith, 2009). Recent research highlights that psychosocial hazards can act as mediators in the relationship between safety culture and safety performance (Jasiulewicz-Kaczmarek et al., 2015), so the management of psychosocial factors is an important part of efforts to improve company safety performance.

Framework

A frame of thought is a conceptual model consisting of variables that are interconnected and formed into a proposition or hypothesis, which determines

the relationship between variables to explain a phenomenon (Creswell, 2018). This study uses the variables Safety Culture as independent variables (Variable X), Psychosocial Hazard as mediators (Variable Y), and Safety Performance as dependent variables (Variable Z). The framework of thought in this study is as follows:

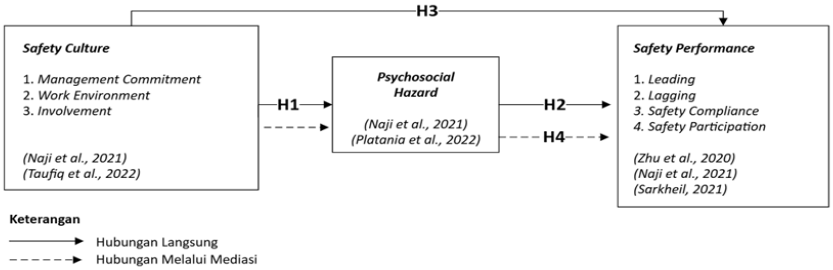

Figure 1. Frame of Mind

Source: Author's processed data, 2025

METHODOLOGY

This study uses a quantitative method with a causal-descriptive approach. The main objective of the study was to test the influence of Safety Culture on Safety Performance both directly and through the mediating role of Psychosocial Hazards. This study developed a model that refers to previous research (Naji et al., 2021; Zhu et al., 2020), by adding the dimensions of safety compliance and safety participation to the Safety Performance variable.

Population and Sample

The population in this study is all employees of PT XYZ, the largest gas subholding company in Indonesia that operates in the midstream, downstream, and other natural gas supporting sectors. The survey respondents included organic, non-organic, and contractor employees. Sampling is carried out using stratified random sampling techniques, so that the distribution of samples can represent various groups of workers in the company environment. The number of samples collected was 210 respondents, all of whom came from the operational areas of Region 1 (Sumatra and Riau Islands).

Instruments and Data Collection

Data collection was carried out using a survey method using a questionnaire based on a 5-point Likert scale. The measurement instruments were developed from previous studies that are relevant and have been validated: Safety Culture (Naji et al., 2021), Psychosocial Hazards (Chirico et al., 2019), and Safety Performance (Bunner et al., 2018; Zhu et al., 2020). The questionnaire has gone through a pre-test process to ensure validity and reliability before being used in the main data collection.

Data Analysis Techniques

The data was analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method, using the latest version of SmartPLS software. The stages of analysis include:

1. An outer model test was used to measure convergent validity (with AVE ≥ 0.50), construct reliability (with Composite Reliability ≥ 0.70), and discriminant validity.
2. The internal test of the model to test the relationship between variables (test the path coefficient and statistical significance), as well as measure the value of R^2 to determine the ability to explain the model.
3. The mediation effect test was carried out by bootstrapping method to identify the role of Psychosocial Hazards in mediating the influence of Safety Culture on Safety Performance.

The entire analysis process is carried out in accordance with the applicable standards in SEM-PLS-based research, in order to obtain robust and valid results.

RESEARCH RESULT

Respondents' Responses Regarding Variable Safety Culture

Variable Safety Culture received an overall score of 91.17% where this value was included in the Very Good category. Therefore, it can be interpreted that the company has implemented an excellent safety culture through management commitment, work environment and management involvement in solving safety issues. When viewed based on the statement items on the questionnaire that the respondents have filled out, it can be seen that the statement item C1 has the lowest percentage score compared to other statement items, which is 88.29%. Meanwhile, the highest statement item is found in statement A1 with a percentage of 93.24%.

Based on the above results, it can be concluded that Variable Safety Culture has a total percentage score of 91.17% which can be categorized as Excellent. Interpretation in the form of a continuum line is shown as follows

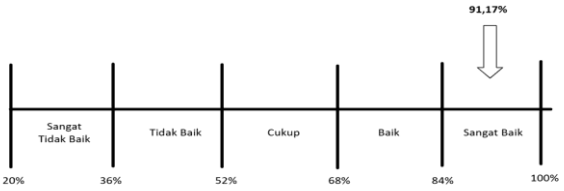

Figure 2. Safety Culture Variable Score Continuum Line
Source: Author's processed data, 2025

Respondents' Responses Regarding Variable Psychosocial Hazards

Variable Psychosocial Hazards received an overall score of 86.27% where the score was included in the Very Good category. So, it can be interpreted that the psychosocial condition of PT XYZ employees is good enough to be able to do the work that is charged. When viewed based on the statement items on the questionnaire that the respondents have filled out, it can be seen that statement item 3 has the lowest percentage score compared to other statement items, which is 86.19%. Meanwhile, the highest statement item is found in statement 2 with a percentage of 89.14%.

Based on the above results, it can be concluded that Variable Psychosocial Hazards has a total percentage score of 86.27% which can be categorized as Excellent. Interpretation in the form of a continuum line is shown as follows:

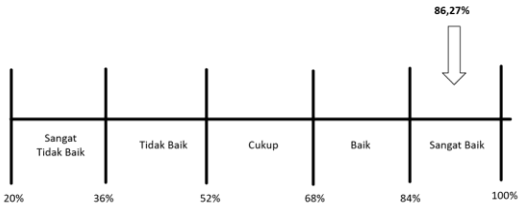

Figure 3. Psychosocial Hazards Variable Score Continuum Line
Source: Author's processed data, 2025

Respondents' Responses Regarding Variable Safety Performance

Variable Safety Performance received an overall score of 90.78% where the value was included in the Very Good category. Therefore, it can be interpreted that PT XYZ's Safety Performance achievement is in accordance with the ideal safety procedures in the work environment. When viewed based on the statement items on the questionnaire that the respondents have filled out, it can be seen that the statement item B2 has the lowest percentage score compared to other statement items, which is 85.71%. Meanwhile, the highest statement item is found in the D5 statement with a percentage of 93.90%.

Based on the above results, it can be concluded that Variable Safety Performance has a total percentage score of 90.78% which can be categorized as Excellent. Interpretation in the form of a continuum line is shown as follows:

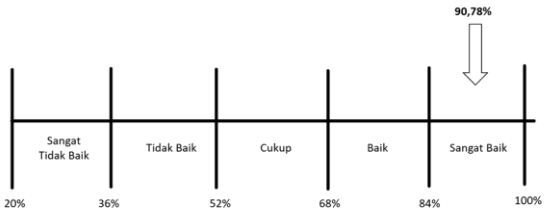

Figure 4. Safety Performance Variable Score Continuum Line
Source: Author's processed data, 2025

Analisis Structural Equation Model (SEM)

This study utilizes SEM with the aim of determining the relationship between Safety Culture variables and Safety Performance through the mediation of Psychosocial Hazard in PT XYZ. This study uses the type of PLS-SEM using the help of SmartPLS 4.0 software.

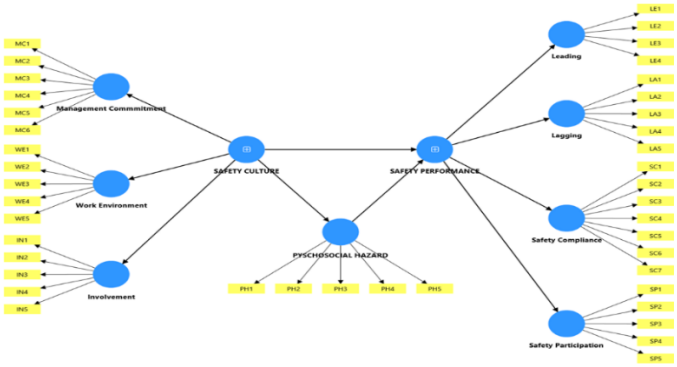

Figure 5. Variable Modeling
Source: Author's processed data, 2025

Convergent Validity

The value of the first order loading factor of all items in each dimension owned by the variable exceeds the rule of thumb value, which ranges from 0.730 to 0.920 so that it is declared to be valid for convergence. This means that any changes to the above dimensions will be reflected in the item with the highest value, except for items LA2 and SP1 marked with the red block above have values of 0.658 and 0.691 (<0.7) respectively, so the item must be dropped because it is invalid or does not meet the criteria.

When viewed from the Average Variance Extracted (AVE) value, an indicator is considered valid if the AVE values in each dimension or in each variable exceed 0.50. Based on the table below, it can be concluded that all values in each dimension are classified as valid, because these values exceed the criteria (>0.50), so that the dimensions in this study are declared valid.

Table 1. AVE Analysis Results

Construct	***Average Variance Extracted* (AVE)**
Involvement	0.703
Lagging	0.714
Leading	0.747
Management Commitment	0.694
PSYCHOSOCIAL GAMBLING	0.690
Safety Compliance	0.712
Safety Participation	0.790
Work Environment	0.710

Internal Composite Reliability

In the rule of thumb, an indicator can be declared reliable if the Cronbach's alpha or composite reliability value is more than 0.7. The results obtained after conducting composite reliability and cronbach alpha analysis in this study can be presented in the following table:

Internal Composite Reliability

In the rule of thumb, an indicator can be declared reliable if the Cronbach's alpha or composite reliability value is more than 0.7. The results obtained after conducting composite reliability and cronbach alpha analysis in this study can be presented in the following table:

Table 2. Composite Reliability Analysis Results

Construct	**Cronbach's alpha**	**Composite reliability**	**Information**
Involvement	0.894	0.922	Reliable
Lagging	0.865	0.909	Reliable
Leading	0.887	0.922	Reliable
Management Commmitment	0.911	0.931	Reliable
PYSCHOSOCIAL HAZARD	0.887	0.917	Reliable
Safety Compliance	0.932	0.945	Reliable

Construct	Cronbach's alpha	Composite reliability	Information
Safety Participation	0.911	0.938	Reliable
Work Environment	0.897	0.924	Reliable

Based on the table above, it can be seen that the composite reliability and cronbach alpha values owned by all dimensions in this study have a value of more than 0.7, so it can be concluded that all measurement items that measure the dimensions in this study are declared reliable or consistent.

Discriminant Validity

There are 3 ways to determine this discriminant validity, namely by looking at the cross loading value on each variable more than 0.7 (>0.7). In addition, it can be measured by Forner-Larcker testing, and can also be measured through HTMT testing. The results obtained in the discriminant validity analysis in this study by looking at the cross loading value can be explained in the following table:

Table 3. Results of Discriminant Validity Analysis (Cross Loading)

	Involvement	*Lagging*	*Leading*	*Management Commmitment*	*PYSCHOSOCIAL HAZARD*	*Safety Compliance*	*Safety Participation*	*Work Environment*
IN1	0.835	0.611	0.643	0.651	0.542	0.637	0.607	0.715
IN2	0.807	0.562	0.605	0.572	0.459	0.564	0.512	0.565
IN3	0.901	0.685	0.706	0.651	0.567	0.648	0.607	0.71
IN4	0.837	0.619	0.689	0.589	0.574	0.646	0.636	0.705
IN5	0.808	0.603	0.681	0.561	0.547	0.649	0.682	0.67
LA1	0.522	0.756	0.589	0.47	0.458	0.61	0.551	0.55
LA3	0.633	0.857	0.694	0.516	0.551	0.721	0.656	0.62
LA4	0.643	0.855	0.64	0.522	0.598	0.696	0.626	0.598
LA5	0.681	0.905	0.715	0.588	0.605	0.719	0.636	0.666
LE1	0.671	0.617	0.836	0.607	0.529	0.666	0.646	0.602
LE2	0.654	0.627	0.852	0.536	0.623	0.741	0.751	0.719
LE3	0.722	0.7	0.878	0.625	0.607	0.755	0.703	0.729
LE4	0.697	0.753	0.889	0.586	0.608	0.804	0.734	0.688
MC1	0.474	0.435	0.454	0.73	0.418	0.433	0.398	0.432
MC2	0.54	0.483	0.535	0.849	0.442	0.498	0.464	0.524
MC3	0.636	0.491	0.577	0.898	0.535	0.549	0.525	0.635
MC4	0.659	0.568	0.59	0.853	0.523	0.554	0.542	0.653
MC5	0.637	0.535	0.619	0.827	0.605	0.603	0.592	0.721
MC6	0.638	0.579	0.602	0.831	0.598	0.621	0.564	0.674
PH1	0.463	0.463	0.427	0.487	0.743	0.448	0.404	0.567
PH2	0.583	0.591	0.634	0.58	0.839	0.641	0.613	0.627
PH3	0.474	0.513	0.541	0.486	0.81	0.566	0.541	0.556
PH4	0.582	0.587	0.596	0.545	0.899	0.649	0.607	0.619
PH5	0.554	0.561	0.628	0.511	0.855	0.612	0.593	0.631

	Involvement	*Lagging*	*Leading*	*Management Commmitment*	*PYSCHOSOCIAL HAZARD*	*Safety Compliance*	*Safety Participation*	*Work Environment*
SC1	0.707	0.786	0.786	0.629	0.588	0.852	0.774	0.702
SC2	0.69	0.711	0.808	0.618	0.59	0.896	0.789	0.683
SC3	0.668	0.677	0.782	0.566	0.598	0.908	0.794	0.686
SC4	0.609	0.641	0.722	0.543	0.572	0.857	0.731	0.623
SC5	0.615	0.668	0.702	0.535	0.629	0.831	0.697	0.675
SC6	0.539	0.629	0.577	0.482	0.634	0.773	0.624	0.58
SC7	0.589	0.692	0.677	0.491	0.579	0.78	0.687	0.64
SP2	0.668	0.674	0.739	0.568	0.606	0.761	0.892	0.691
SP3	0.649	0.647	0.744	0.543	0.619	0.809	0.92	0.695
SP4	0.642	0.659	0.72	0.573	0.627	0.763	0.895	0.679
SP5	0.623	0.622	0.715	0.53	0.526	0.743	0.847	0.633
WE1	0.699	0.576	0.659	0.648	0.621	0.619	0.612	0.843
WE2	0.707	0.615	0.646	0.606	0.654	0.621	0.631	0.867
WE3	0.715	0.638	0.738	0.655	0.599	0.725	0.687	0.853
WE4	0.563	0.591	0.566	0.59	0.573	0.604	0.583	0.793
WE5	0.696	0.619	0.723	0.602	0.596	0.705	0.682	0.854

Based on the table above, it can be seen that the value of each indicator in each dimension already has a value more than the criterion, which is 0.7 and for the correlation of blocks between dimensions and indicators, it is higher than the correlation with other dimensions. So it can be interpreted that the dimension suspects that the block indicator is better than other indicators. This can prove that all variables have a good discriminant validity value.

Table 4. Results of Discriminant Validity Analysis (Fornell-Larcker)

	Involvement	*Lagging*	*Leading*	*Management Commmitment*	*PYSCHOSOCIAL HAZARD*	*Safety Compliance*	*Safety Participation*	*Work Environment*
Involvement	**0.838**							
Lagging	0.736	**0.845**						
Leading	0.794	0.782	**0.864**					
Management Commmitment	0.723	0.622	0.680	**0.833**				
PYSCHOSOCIAL HAZARD	0.643	0.657	0.686	0.630	**0.831**			
Safety Compliance	0.751	0.814	0.86	0.657	0.707	**0.844**		
Safety Participation	0.726	0.732	0.821	0.623	0.670	0.866	**0.889**	
Work Environment	0.805	0.722	0.793	0.737	0.723	0.778	0.759	**0.842**

To strengthen and support the decision, a Fornell-Larcker test was performed, which can be seen through the root value of AVE in each dimension which is higher than the correlation between the other dimensions. By looking at the table above, it can be concluded that the validity of the discrimination is declared fulfilled.

In addition, the HTMT test was also carried out to see the ratio of the average correlation between the measurement items compared to the geometric multiplication root of the average correlation between the measurement items. A good discriminant validity has HTMT which if the correlation between items is higher than between items. The rule of thumb is that if the HTMT value is >0.90, then the discriminant validity evaluation is declared unsuccessful.

Table 5. Results of Discriminant Validity Analysis (HTMT)

	Involvement	***Lagging***	***Leading***	***Management Commmitment***	***PYSCHOSOCIAL HAZARD***	***Safety Compliance***	***Safety Participation***	***Work Environment***
Involvement								
Lagging	0.835							
Leading	0.891	0.890						
Management Commmitment	0.795	0.698	0.754					
PYSCHOSOCIAL HAZARD	0.718	0.746	0.766	0.695				
Safety Compliance	0.820	0.907	**0.940**	0.706	0.776			
Safety Participation	0.805	0.824	**0.912**	0.679	0.739	**0.937**		
Work Environment	0.895	0.819	0.886	0.806	0.81	0.85	0.839	

Based on the results of the HTMT analysis, it was found that the HTMT value between the dimensions of Leading and Safety Compliance (0.940), Leading and Safety Participation (0.912), and Safety Compliance and Safety Participation (0.937) exceeded the threshold of 0.90. This shows the potential problem of discriminant validity. However, because these three dimensions are part of the second-order construct, namely Safety Performance, the high correlation between these sub-dimensions can still be tolerated according to the higher-order construct (second-order construct) approach adopted (Hair et al., 2021).

Outer Model or Measurement Model (Second Order) Analysis

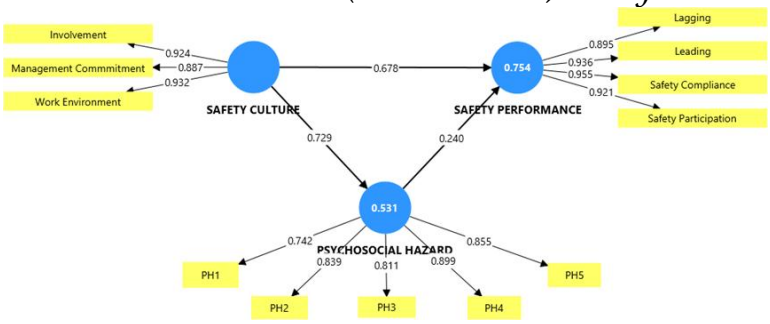

Figure 6. Outer Model Results

Source : Data processed by the author, 2025

Convergent Validity

Testing in the second order is carried out on variables measured by dimensions and also indicators of their dimensions (questionnaire items), so that for maximum testing, this test is carried out with a two-stage approach In the rule of thumb, an indicator can be stated to be valid if the correlation value exceeds 0.7 and the value can be seen in the loading factor. The results of convergent validity in this study can be seen in the following table:

Table 6. Convergent Validity Analysis Results

	PSYCHOSOCIAL HAZARD	*SAFETY CULTURE*	*SAFETY PERFORMANCE*
Involvement		0.924	
Lagging			0.895
Leading			0.936
Management Commmitment		0.887	
PH1	0.742		
PH2	0.839		
PH3	0.811		
PH4	0.899		
PH5	0.855		
Safety Compliance			0.955
Safety Participation			0.921
Work Environment		0.932	

Based on the second-order loading factor value above, of all dimensions or indicators that measure each variable, the value exceeds the value of 0.7, which ranges from 0.742 to 0.955 so that the value is declared to be valid convergent. For the Safety Culture variable, it has the highest dimension, namely the Work Environment which reflects the measurement of the variable. Safety Performance has the Safety Compliance dimension as the highest dimension and Pyschosocial Hzard has the item PH5 as the highest indicator that reflects its variables.

If viewed from the Average Variance Extracted (AVE) value, based on the table below, it can be concluded that all values in each variable are classified as valid, because these values exceed the criteria (>0.50), so that the variables and dimensions in this study are declared valid.

Table 7. AVE Analysis Results

Construct	*Average Variance Extracted* (AVE)
PSYCHOSOCIAL GAMBLING	0.690
SAFETY CULTURE	0.837
SAFETY PERFORMANCE	0.860

Internal Composite Reliability

Table 8. Composite Reliability Analysis Results

Construct	*Cronbach's alpha*	*Composite reliability*	Information
PYSCHOSOCIAL HAZARD	0.887	0.917	*Reliable*
SAFETY CULTURE	0.902	0.939	*Reliable*
SAFETY PERFORMANCE	0.945	0.961	*Reliable*

Based on the table above, it can be seen that the composite reliability and cronbach alpha values owned by all variables in this study have a value of more than 0.7, so it can be concluded that all measurement items that measure the variables in this study are declared reliable or consistent.

Discriminant Validity

Table 9. Results of Discriminant Validity Analysis (Cross Loading)

	SAFETY CULTURE	*PSYCHOSOCIAL HAZARD*	*SAFETY PERFORMANCE*
Involvement	0.924	0.643	0.811
Work Environment	0.932	0.723	0.824
Management Commmitment	0.887	0.630	0.696
PH1	0.554	0.742	0.469
PH2	0.653	0.839	0.669
PH3	0.554	0.811	0.583
PH4	0.638	0.899	0.658
PH5	0.621	0.855	0.646
Lagging	0.760	0.657	0.895
Leading	0.829	0.686	0.936
Safety Compliance	0.799	0.707	0.955
Safety Participation	0.772	0.670	0.921

Based on the table above, it can be seen that the value in each dimension in each variable already has a value more than the criterion, which is 0.7 and for the correlation between blocks of variables and the dimensions are higher than the correlation with other dimensions. So it can be interpreted that the variable suspects that the dimension of the block is better than other indicators. This can prove that all variables have a good discriminant validity value.

Table 10. Results of Discriminant Validity Analysis (Fornell-Larcker)

	PSYCHOSOCIAL HAZARD	*SAFETY CULTURE*	*SAFETY PERFORMANCE*
PSYCHOSOCIAL HAZARD	**0.831**		
SAFETY CULTURE	0.729	**0.915**	
SAFETY PERFORMANCE	0.734	0.852	**0.927**

To strengthen and support the decision, a Fornell-Larcker test was carried out which can be seen through the root value of AVE in each variable which is higher than in the correlation between the variables and the other variables. By looking at the table above, it can be concluded that the validity of the discrimination is declared fulfilled.

In addition, the HTMT test was also carried out to see the ratio of the average correlation between the measurement items compared to the geometric multiplication root of the average correlation between the measurement items. A good discriminant validity has HTMT which if the correlation between items is higher than between items. The rule of thumb is that if the HTMT value is >0.90, then the discriminant validity evaluation is declared unsuccessful.

Table 11. Results of Discriminant Validity Analysis (HTMT)

	PSYCHOSOCIAL HAZARD	**SAFETY CULTURE**	**SAFETY PERFORMANCE**
PSYCHOSOCIAL HAZARD			
SAFETY CULTURE	0.811		
SAFETY PERFORMANCE	0.796	**0.919**	

Based on the results of the HTMT analysis, it was found that the HTMT value was between the variables Safety Culture and Safety Performance (0.919), this exceeded the category of good discriminant value (>0.90). This indicates a weak indication of discriminant validity between these variables, which may be due to conceptual similarities and similar indicators. However, based on the Fornell-Larcker analysis and the Cross Loading analysis, this variable is maintained with the note that the high HTMT value is due to the practical linkage in the context of occupational safety. This can be reinforced by previous research that states that although they are interrelated, Safety Culture and Safety Performance have different concepts, where Safety Culture represents the values and perceptions of the organization, while Safety Performance reflects behavioral outcomes and measurable safety indicators (Naji et al., 2021).

DISCUSSION

This study has processed the distribution of questionnaires on a sampling of respondents of PT. XYZ which is found in various parts such as Sales and Operation Region (SOR) 1, Project Management Officer (PMO), Operation and Maintainance Management (OMM), and so on for the Sumatra and Riau Islands regions. Based on the results of the analysis of the distribution of the

questionnaire, several characteristics were obtained in the respondents, including:

1. Based on gender, the majority of respondents in this study were men, with the number of respondents in the male category reaching 82% or equivalent to 172 respondents out of the total respondents.
2. Based on their age, the majority of respondents in this study were in the age category of 31 to 40 years, with the number of respondents in this category being 43% or equivalent to 90 respondents from the total number of respondents.
3. Based on the last education, the majority of respondents in this study were in the Bachelor or S-1 education category, with the number of respondents in this category being 43% or equivalent to 90 respondents from the total respondents.
4. Based on the length of work, the majority of respondents in this study were in the 10 to 15 years category, with the number of respondents in this category being 27% or equivalent to 56 respondents out of the total respondents.
5. Based on the work section, the majority of respondents in this study were in the Support and Service Function section, with the number of respondents in this category being 26% or equivalent to 55 respondents from the total respondents.

Based on the results of calculation and analysis of respondent data that have been obtained, the results of hypothesis testing are obtained which can be described in the next discussion, namely:

The Influence of Safety Culture on Psychosocial Hazards

Based on the results of the calculations and analyses that have been carried out, this first hypothesis can be explained if the Safety Culture variable has a positive and significant relationship with Psychosocial Hazard. This can be seen in the statistical value of 16.189 which is greater than 1.645 (>1.645) and the p-value of 0.000 which is less than 0.05 (<0.05), as well as the results of the path coefficient test, the Safety Culture variable has an influence of 72.9% on Psychosocial Hazard, so that H1 in this study is acceptable. This means that the better the Safety Culture, the lower the Psychosocial Hazard felt.

The results of this study are in line with research conducted by Naji et al. (2021), there are several studies that have previously shown that psychosocial hazards in the work environment are greatly influenced by the effectiveness of safety culture among workers, this plays a very important role in encouraging worker involvement in safety issues. Both Naji et al, (2021) and Kortum et al, (2010) both affirm that safety culture has a significant influence on the management of psychosocial hazards in the workplace. A strong safety culture will encourage a better policy system against work stress and psychologically unhealthy conditions, so that safety culture has an important role in preventing and reducing psychosocial hazards in the work environment.

The Effect of Psychosocial Hazards on Safety Performance

Based on the results of the calculations and analyses that have been carried out, this second hypothesis can be explained if the Psychosocial Hazard variable

has a positive and significant relationship with Safety Performance. This can be seen in the statistical value of 3.934 which is greater than 1.645 (>1.645) and the p-value of 0.000 which is smaller than 0.05 (<0.05), and for the results of the path coefficient test, the Psychosocial Hazard variable has an influence of 24% on Safety Performance, so that H2 in this study is acceptable. This means that the perception of Psychosocial Hazard of employees contributes significantly to Safety Performance at PT XYZ.

The results of this study are not in line with the research conducted by Manapragda et al, (2019) in the context of nursing, that in the study there was no significant direct relationship between psychosocial hazard and safety performance. This means that the level of conflict, workload, and lack of support do not directly predict whether or not nurses will carry out safe work practices. However, in contrast to the research conducted by Naji et al, (2019) on the oil and gas industry, there is a significant influence between psychosocial hazard and safety performance. The study showed that the higher the level of psychosocial hazard, the lower the safety performance of workers, both in leading and lagging indicators.

The Effect of Safety Culture on Safety Performance

Based on the results of calculations and analyses that have been carried out, this third hypothesis can be explained if the Safety Culture variable has a positive and significant relationship with Safety Performance. This can be seen from the statistical value of 10.991 which is greater than 1.645 (>1.645) and the p-value of 0.000 which is less than 0.05 (<0.05), as well as the results of the path coefficient test, the Safety Culture variable has an influence of 67.8% on Safety Performance, so that H3 is acceptable. This means that the better the Safety Culture, the higher the Safety Performance achieved.

The results of this study are in line with previous research on the Safety Culture variable which has a positive and significant influence on the Safety Performance variable, so that both organizations and employees must be able to ensure a strong safety culture in order to maintain high safety standards (Atikasari et al., 2022). In line with the study, there are other studies that have the same results, namely the Safety Culture variable and its dimensions such as work environment, management commitment, and overall involvement have a positive and significant influence on the Safety Performance variable, thus it can be interpreted that a high level of safety culture will allow the provision of sufficient resources in ensuring good safety performance (Naji et al., 2021).

The Influence of Psychosocial Hazard Mediates Safety Culture and Safety Performance

Based on the results of calculations and analyses that have been carried out, this fourth hypothesis can be explained if the variable Safety Culture through Psychosocial Hazard to Safety Performance and all its dimensions have a positive and significant relationship. This can be seen from the statistical value of 3.609 which is greater than 1.645 (>1.645) and the p-value of 0.000 which is less than 0.05 (<0.05), as well as the results of the path coefficient test, the Safety Culture variable through Psychosocial Hazard towards Safety Performance and all its

dimensions have an influence of 17.5%, so that H4 can be accepted. This means that Psychosocial Hazard significantly mediates the relationship between Safety Culture and all aspects of Safety Performance, both in aggregate and in each dimension of its indicators.

The results of this study are in line with previous research on the influence of safety culture variables on safety performance mediated by psychosocial hazards, where the results are in line with this study, namely positive and significant effects. Thus, the existence of a strong safety culture will reduce psychosocial hazards for employees in the work environment, and will affect the improvement of safety performance. So organizations must actively reduce psychosocial pressure so that safety culture interventions can effectively improve safety performance (Naji et al., 2021).

As in previous research, Naji et al, (2021) stated that a positive level of psychosocial hazard safety will encourage and increase the safety performance of workers in the work environment. In addition, Ekeke et al, (2024) also explained that workers who have a clear work role and receive social support experience fewer accidents and they show better performance. Therefore, researchers believe that an effective safety culture will increase the level of psychosocial hazard safety which will lead to an increase in worker safety performance.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This study shows that Safety Culture has a positive and significant effect on Psychosocial Hazards and Safety Performance, both directly and indirectly. Psychosocial Hazards have proven to be significant mediators in the relationship between Safety Culture and Safety Performance. In general, the respondents' responses to the three research variables were in the very good category, reflecting the safety culture, psychosocial conditions, and safety performance that was already strong in the PT XYZ environment.

Recommendation

Theoretical: Further research is recommended to develop the model by adding other variables such as Leadership and Safety Climate, as well as applying it to different industry sectors to enrich the generalization of the findings. Analysis methods can also be extended, for example using CB-SEM or other techniques for comparison of results.

Practical: PT XYZ needs to continue to strengthen its Safety Culture by increasing management commitment, employee engagement, and proactivity in risk control. The management of Psychosocial Hazards also needs to be considered, through balancing workload management and strengthening team communication. The strategy to improve Safety Performance can be focused on strengthening the dimensions of leading, lagging, safety compliance, and safety participation, to achieve more optimal and sustainable safety performance.

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