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THE RELATIONSHIP BETWEEN THE IMPLEMENTATION OF SAFETY BRIEFING AND WORKER SAFE BEHAVIOR AT PT PLN UP GRESIK

Agnes Dwi Shavitri[1], Sestiono Mindiharto[2], ✉
[1]Public Health Study Program, Muhammadiyah University of Gresik
[2]Public Health Study Program, Muhammadiyah University of Gresik
agnsdwi@gmail.com, sestionomindiharto@umg.ac.id

Abstract

The prevention of occupational illnesses and accidents is an essential part of every industrial operation's Occupational Safety and Health (OHS) plan. Safety briefings are a part of the company's strategy to raise awareness of the importance of safety on the job. The purpose of this research is to ascertain whether or not PT. PLN Nusantara Power UP Gresik's safety briefings had an effect on employees' safety practices. The research methodology employed in this study was quantitative and based on correlations. Employees of PT. PLN Nusantara Power UP Gresik made up the study's population, and a sampling strategy that was suitable for the population's characteristics was used to identify the sample. Questionnaires consisting of indicators of safety briefing implementation and worker safety behavior were sent in order to gather data. In order to find the relationships between the variables, statistical analysis was used to the collected data. There was a favorable and statistically significant correlation between workers' safety behavior and the introduction of safety briefings, according to the data. This suggests that the degree of worker safety behavior is directly proportional to the efficacy of safety briefings. Therefore, PT. PLN Nusantara Power UP Gresik's safety briefings might be a useful tool for fostering a safer work environment.

Keywords**:** *Occupational safety and health, Safety briefing, Worker safe behavior*

✉ Corresponding author : Agnes Dwi Shavitri[1]
Address : Jl. Sumatera No. 101 GKB, Gresik Regency, East Java
Email : agnsdwi@gmail.com
Phone : 0812-3209-3780

INTRODUCTION

The basis of a safe and productive work environment is Occupational Safety and Health (OHS). This is especially true in high-risk industries like power production and energy. The OHS system encompasses more than just the implementation of technical regulations and the use of protective equipment; it also encompasses a behavioral approach that directly influences workers' decisions and actions in the field. The concept of safe worker behavior is often associated with a primary determinant in preventing workplace accidents, as unsafe behavior remains a major contributor to accidents across various industrial sectors. Research shows that the implementation of OHS through various elements such as training, supervision, and safety policies is positively correlated with worker safe behavior. This means that the better the OHS implementation, the higher the level of safe behavior demonstrated by workers (Fuadi et al., 2025).

Furthermore, safety briefings are a safety communication strategy routinely implemented before workers begin their work. A safety briefing can be defined as a brief briefing on potential hazards, safety procedures, and anticipatory measures that every worker must understand before beginning work (Sari & Soegiarto, 2023). In the industrial context, safety briefings are intended to ensure that workers not only understand occupational risks but also implement safe practices while working. Several studies indicate that effective safety briefings can improve workers' understanding, attitudes, and safety practices, thus leading to higher levels of safe work behavior.

Occupational Safety and Health (OHS) is a fundamental aspect of company operations, particularly in high-risk industrial sectors such as power generation. At PT. PLN Nusantara Power UP Gresik, OHS implementation focuses not only on providing personal protective equipment or meeting technical standards, but also on fostering safe worker behavior in every work activity. Safe worker behavior reflects adherence to safety procedures, hazard prevention principles, and individual responsibility for preventing workplace accidents. One strategic effort to encourage safe behavior is through safety briefings, which are brief instructions given before workers begin work tasks to identify potential hazards, safe work procedures, and necessary precautionary measures. Workers are believed to behave safer and more responsibly on the job after receiving safety briefings, which raise their knowledge of potential dangers in the workplace. As a result, we need to look at how PT. PLN Nusantara Power UP Gresik's safety briefings have affected employee conduct.

Based on initial observations and literature review, several issues emerged related to the implementation of safety briefings and worker safety behavior, including:

1. Variations in the implementation of safety briefings across work units,
2. Some workers still exhibit unsafe behavior despite attending safety briefings, and
3. Inconsistencies in the implementation of safety procedures that potentially increase the risk of accidents.

These issues can impact the low effectiveness of OHS in the workplace and increase the likelihood of safety incidents. Therefore, more in-depth research is needed to identify the relationship between the implementation of safety briefings and worker safety behavior at PT. PLN Nusantara Power UP Gresik. Based on the problem identification above, the research questions are formulated as follows:

1. How is the implementation of safety briefings at PT. PLN Nusantara Power UP Gresik?
2. What is the safety behavior of workers at PT. PLN Nusantara Power UP Gresik?
3. Is there a relationship between the implementation of safety briefings and worker safety behavior at PT. PLN Nusantara Power UP Gresik?

This study aims to describe the implementation of safety briefings and worker safety behavior at PT. PLN Nusantara Power UP Gresik, and to analyze the relationship between safety briefings and worker safety behavior as an effort to prevent workplace accidents and improve the implementation of Occupational Safety and Health (OHS).

We anticipate that this study will add to the growing body of knowledge in the field of Occupational Safety and Health (OHS), specifically as it pertains to the power of safety briefings as a means of inculcating safe practices among employees. On a more practical note, the study's findings can help PT. PLN Nusantara Power UP Gresik's management enhance the efficacy of safety briefing implementation and strategies for developing safe behaviors,

ultimately leading to a more secure and long-lasting workplace.

THEORETICAL BASIS AND HYPOTHESIS DEVELOPMENT

Occupational Safety and Health (OHS)

Through hazard identification, risk mitigation, and the development of a sustainable safety culture, Occupational Safety and Health (OHS) aims to safeguard workers from the risk of accidents, injuries, or occupational illnesses. The Occupational Health and Safety (OHS) approach includes a number of components, including company policies, training, PPE use, and the monitoring and evaluation of OHS policy implementation in the workplace, which guarantees safe worker behavior and compliance with established safety standards (Fuadi et al., 2025). Effective OHS implementation significantly contributes to reducing workplace accidents and improving organizational operational performance by fostering safe worker behavior, a key indicator of workplace safety culture (Fuadi et al., 2025).

In the context of the relationship between safety briefings and worker safe behavior, it is also important to consider the role of safety culture as a foundation that strengthens safe behavior. Safety culture is the shared beliefs, values, and practices within the workplace that aim to reduce accidents through safe work behavior. Quantitative research in the construction industry has shown that OHS culture significantly influences worker safety behavior. The stronger the workplace safety culture, the higher the level of safe work behavior demonstrated by workers (safe behavior). This finding is consistent with the theoretical relationship that OHS internalized within an organizational culture creates a work environment that supports the consistent implementation of safe practices (Pradana et al., 2025).

Furthermore, a study conducted by Fuadi et al., 2025 found that the implementation of OHS elements such as safety policies, training, supervision, and the use of personal protective equipment had a strong positive correlation with worker safety behavior, indicating that a holistic OHS approach impacts not only technical aspects but also improves overall safe behavior. These research findings further reinforce the understanding that conveying safety information through safety briefings will be more effective when underpinned by a strong safety culture and the support of a comprehensive OHS system within the company.

Safety Briefing

A safety briefing is a brief briefing conducted before workers begin a task or work to ensure they understand potential hazards, safety procedures, job risks, and necessary precautionary measures. In industry practice, this terminology is often referred to as a toolbox talk, safety talk, or safety induction. Essentially, it's a brief, routine safety communication session aimed at reinforcing safe work behaviors (Sari & Soegiarto, 2023). The purpose of a safety briefing is to provide relevant information about working conditions, potential risks, and preventative measures, so that workers are better prepared cognitively and behaviorally to perform their duties.

Furthermore, recent research by (Handayani, 2025) confirms that the effects of safety briefings extend beyond the transfer of technical information to include improving workers' risk perception. Regular, interactive safety briefings can help workers understand potential hazards more deeply, making them more likely to take actions consistent with safety principles within their work context. Research in the construction industry has found that safety communication (including formal briefings before starting a task) can improve workers' understanding of work risks and significantly influence safe work behavior, particularly when communication is not one-way but facilitates dialogue between supervisors and workers.

The effective communication component of safety briefings also plays a crucial role in shaping workers' safe behavior. Other research shows that ongoing and structured risk communication can strengthen workers' awareness of hazards, thereby increasing their chances of actively implementing safe attitudes and actions in their daily work (Handayani, 2025). In this study, developing a culture of effective safety communication was reported as a key factor in building risk awareness, which in turn impacts safe work behavior, as workers who feel understood and involved during the communication process tend to have a higher commitment to safety procedures.

Furthermore, empirical evidence also shows that safety briefings work synergistically with other elements of a safety management system to encourage more consistent worker safe behavior (Rifka et al., 2025). For example,

research examining the overall implementation of OHS in industrial settings found that, when safety briefings were combined with safety promotion and systematic training, workers' safe behavior significantly improved, as workers were not only provided with initial information but also supported by efforts to strengthen the safety culture through training and reinforcement. These findings confirm that effective safety briefings depend not only on message delivery but also on their continuity and integration with the overall workplace safety program.

Worker Safe Behavior

Worker safe behavior refers to the actions, habits, and responses of workers who consistently follow safety procedures and avoid behavior that could potentially endanger themselves or others in the work environment. This behavior is a concrete manifestation of the implementation of OHS (K3), reflecting workers' understanding, risk assumptions, and commitment to applicable safety standards. Therefore, safe work behavior is an important indicator in evaluating the effectiveness of a company's safety program (Fuadi et al., 2025). Factors such as knowledge of OHS, supervision, organizational safety culture, and risk communication also influence this safe behavior.

Furthermore, various empirical studies have shown that workers' knowledge and attitudes toward OHS also influence safe behaviors exhibited in the workplace. A quantitative study of facility workers in Batam found that high levels of OHS knowledge were positively and significantly correlated with workers' safe behavior, with increased safety knowledge followed by increased compliance with proper safety practices (Hilal et al., 2024). These findings confirm that knowledge not only influences understanding of procedures but also encourages workers to actively apply safe behavior principles in their daily work activities.

Furthermore, research conducted (Fuadi et al., 2025) in the manufacturing industry sector shows that comprehensive OHS implementation, including policies, training, supervision, and the use of personal protective equipment (PPE), has a strong positive correlation with worker safe behavior. Data from the study reported that the better the OHS elements were implemented, the higher the worker's safe behavior score, reflecting that safe behavior is influenced not only by individual understanding but also by a strong safety management structure within the company. These findings underscore the importance of a comprehensive OHS approach, where workers not only understand safety procedures but are also supported by a consistent organizational system in implementing them.

The Relationship Between Safety Briefing and Safe Behavior

Safety communication, such as safety briefings, is a form of direct interaction between safety managers and workers. It aims to convey information about work risks, safety procedures, and anticipatory measures before work begins. Safety briefings serve not only to convey information but also as a means to reinforce safety messages, increase worker awareness of potential hazards, and build understanding and commitment to safety procedures (effective safety communication). Research on industrial assembly line workers shows that the implementation of safety briefings is moderately correlated with safe attitudes and behaviors. Workers who receive regular safety briefings tend to have safer work attitudes and practices than those who do not receive safety briefings.

Furthermore, research focusing on the effectiveness of safety briefings and safety training indicates that the combination of these two approaches is effective in shaping workers' safe behavior, as systematic briefings can increase safety knowledge, which in turn contributes to safer work behavior. Interactions during safety briefings also provide workers with the opportunity to clarify potential risks, receive feedback from supervisors, and understand the precautions required in the field, thus increasing their safety self-awareness.

Furthermore, literature on safety communication conducted by Zulkarnain et al. (2025) shows that intensive safety communication, including direct instruction such as safety briefings or safety talks, is a crucial strategy for promoting safe behavior in high-risk work environments. Effective communication not only transfers information but also strengthens an organization's safety culture and employee engagement in implementing operational safety standards. This is crucial because safe behavior depends not only on written rules but also on the extent to which employees understand the risks and feel responsible for complying with safety procedures in their daily practices.

Thus, empirical evidence supports the notion that structured and ongoing implementation of safety briefings will positively contribute to the development of safe worker

behavior by increasing knowledge, risk awareness, and active involvement in safety practices. This success occurs when safety briefings are conducted regularly and systematically, and accompanied by two-way communication between the briefer and the recipient.

HYPOTHESIS

A research hypothesis is an educated guess about the nature of the connection between study variables that is based on prior work in the field and theoretical frameworks. It is still necessary to gather and analyze data objectively to show its validity. After reviewing the literature and developing a conceptual framework, the following study hypothesis is developed:

H_0: There is no significant relationship between the implementation of safety briefings and worker safety behavior at PT. PLN Nusantara Power UP Gresik.

H_1: There is a significant relationship between the implementation of safety briefings and worker safety behavior at PT. PLN Nusantara Power UP Gresik.

METHODS

Research Type and Approach

This study employed a quantitative approach with a correlational approach. The researcher employed a quantitative approach because the study aimed to objectively measure and analyze the relationship between variables based on numerical data. The correlational approach was chosen to determine the existence and degree of relationship between the implementation of safety briefings as the independent variable and worker safety behavior as the dependent variable.

Research Location and Timeline

This research was conducted at PT. PLN Nusantara Power Unit Pembangkitan (UP) Gresik, a power generation unit with a high level of occupational risk, making the implementation of occupational safety very important. The research period was from December 2025 to January 2026, covering the preparation phase, data collection, data processing, and analysis.

Population and Sample

The population in this study was all workers at PT. PLN Nusantara Power UP Gresik who were directly involved in operational activities and regularly attended safety briefings. Every member of the population had an equal chance of being chosen as a responder in a simple random sampling approach, which was used to identify the study sample. In order to minimize bias in data collecting and ensure a representative sample, this approach was used. A total of 222 people were included in the research. Since the population size was known with absolute certainty, the Slovin formula was used to establish the sample size for this investigation. Next, we have the Slovin formula:

$$\text{n} = \frac{N}{1 + N\,(e)^2}$$

n : Number of Samples
N : Population Size
e : Error Tolerance Limit

In this study, an error rate of 5% (0.05) was used, so the calculation is as follows:

$$\text{n} = \frac{222}{1 + 222\,(0{,}05)^2}$$

$$\text{n} = \frac{222}{1 + 222\,(0{,}0025)}$$

$$\text{n} = \frac{222}{1 + 0{,}555}$$

$$\text{n} = \frac{222}{1{,}555}$$

$$\text{n} = \mathbf{142,77\ (143)}$$

Research Variables

The variables in this study consist of two main variables: the independent variable and the dependent variable.

Independent variable (X): Implementation of safety briefings, which includes aspects of conveying safety information, material clarity, frequency of implementation, and worker involvement.

Dependent variable (Y): Worker safe behavior, demonstrated through compliance with safety procedures, use of personal protective equipment, and risk prevention measures at work.

Data Collection Techniques

A questionnaire served as the principal tool for data collection in this research. To assess how people felt about safety briefings and how

safe workers were being, the survey used a closed-ended question format with a specified rating scale. Furthermore, data collection was supported by documentation studies and initial observations to obtain a general overview of the state of occupational safety implementation at the research site.

Research Instrument

An occupational safety theory-related questionnaire was developed as the research instrument using research variable indicators. A reliability test was run to ascertain the consistency of the research instrument, and a validity test was run to verify that each statement item could measure the variables under study. In order for an instrument to be considered usable for statistical analysis, it has to meet certain reliability and validity standards.

Data Analysis Techniques

We used both descriptive and inferential statistics to look at the data we gathered. Respondent demographics, safety briefing implementation circumstances, and employee safety behavior were all described using descriptive analysis. In addition, the study hypotheses were tested using correlation tests to identify the link between the implementation of safety briefings and workers' safe conduct. Inferential analysis was used for this purpose. In order to provide a more precise and organized study, statistical software was used to analyze the data.

RESULTS AND DISCUSSION

The questionnaire was administered to a sample of 143 respondents by employees of PT PLN Power UP Gresik.

1. Classification of respondents by gender

Table 1. Classification of Respondents by Gender

No	Gender	Total	Percentage (%)
1	Male	143	100%

The following data obtained from respondents according to their gender classification in Table 4.1 shows that all respondents in this study were male, totaling 143 (100%).

2. Classification of Respondents by Age

Table 2. Respondent Classification by Age

No	Age	Number	Percentage (%)
1	21-30	46	32,17%
2	31-40	58	40,56%
3	41-50	39	27,27%
Total		**143**	**100%**

The following data obtained from the respondents according to the age classification in Table 4.2 shows that 46 (32.17%) of the respondents in this study were aged 21-30, 58 (40.56%) were aged 31-40, and 39 (27.27%) were aged 41-50.

3. Respondent Classification by Education

Table 3. Classification of Respondents Based on Education

No	Education	Total	Percentage (%)
1	SMA	29	20,28%
2	D3/D4	46	32,17%
3	S1	68	47,55%
	Total	**143**	**100%**

The following data obtained in Table 4.3 shows that the majority of respondents in this study had a bachelor's degree (68 respondents (47.55%), followed by 46 (32.17%) with a diploma (D3/D4), and 29 (20.28%).

DATA ANALYSIS

Validity Test

To determine how well a research instrument measures its intended constructs, it is subjected to the validity test. When it successfully gathers information from the variables under study, a statement item is deemed legitimate. Using the Pearson Product Moment correlation approach, researchers tested the validity of the study by comparing the overall score to the scores of each item. The statement item was deemed acceptable if the computed r-value was higher than the table r-value at a 5% significance level ($\alpha = 0.05$). On the other hand, an item is deemed illegitimate and cannot be used for further data processing if its computed r value is lower than its table r value. Accurate and systematic calculation results were obtained via validity testing, which was carried out using the SPSS software.

Table 4. Validity Test of the Safety Briefing Implementation Variable (X)

Statement	r-Calculate	r-Table	Description
X1.1	0,758	0,361	Valid
X1.2	0,717	0,361	Valid
X1.3	0,652	0,361	Valid
X1.4	0,779	0,361	Valid
X1.5	0,729	0,361	Valid

Statement	r-Calculate	r-Table	Description
X1.6	0,769	0,361	Valid
X1.7	0,720	0,361	Valid
X1.8	0,662	0,361	Valid
X1.9	0,822	0,361	Valid
X1.10	0,801	0,361	Valid

Source: Data processed by researchers, 2026

Based on the validity test results for the 10 statements in the Safety Briefing Implementation variable (X), the calculated r-values for all items ranged from 0.652 to 0.822. These values were then compared with the r-table value at a significance level of 5% for the number of respondents (n), which was 0.361.

The analysis results showed that all statement items (X1.1 to X1.10) had calculated r-values greater than the r-table (0.361). Therefore, it can be concluded that all statement items in the Safety Briefing Implementation variable are valid and suitable for use as data collection instruments in this study. Therefore, no items needed to be eliminated because all statements were able to accurately measure the variables studied.

Table 5. Validity Test of Work Safety Behavior Variable (Y)

Statement	r-Calculate	r-Table	Description
Y1.1	0,667	0,361	Valid
Y1.2	0,731	0,361	Valid
Y1.3	0,611	0,361	Valid
Y1.4	0,578	0,361	Valid
Y1.5	0,607	0,361	Valid
Y1.6	0,727	0,361	Valid
Y1.7	0,587	0,361	Valid
Y1.8	0,681	0,361	Valid
Y1.9	0,689	0,361	Valid
Y1.10	0,523	0,361	Valid
Y1.11	0,492	0,361	Valid

Source: Data processed by researchers, 2026

Eleven statement items were used to examine the validity of the Worker Safe Behavior variable (Y). The estimated r-value was compared to the table r-value of 0.361 at a significance level of 5%. The computed r-values for each item varied from 0.492 to 0.731 according to the test results.

These results indicate that all statement items, namely Y1.1 to Y1.11, had calculated r-values greater than the table r-value (calculated r-value > 0.361). Therefore, it can be concluded that all statement items in the Worker Safe Behavior variable are valid and able to accurately measure the construct under study. Therefore, all items have met the validity criteria, and all statements in the Worker Safe Behavior variable can be used in further data analysis without any items needing to be eliminated.

Reliability Test

The consistency of the research instrument in measuring the variables under study may be ascertained via reliability testing. The reliability of an instrument is determined by how consistently it provides the same or comparable findings when used on the same or similar things several times. In this research, reliability testing was conducted using SPSS and the Cronbach's Alpha technique. If a variable has a Cronbach's Alpha value greater than 0.60, it is deemed dependable. Instruments are deemed less dependable and may need revisions or deletions of items when their Alpha values fall below 0.60.

Table 6. Reliability Test of Variables X and Y

Variable	Cronbach's Alpha	Criteria	Description
Safety Briefing Implementation	0,907	0,60	Reliable
Safe Work Behavior	0,837	0,60	Reliable

Source: Data processed by researchers, 2026

In order to find out how consistently the research instrument measured the variables under study, a reliability test was carried out. An instrument was considered reliable in this research if its Cronbach's Alpha value was higher than 0.60, according to the reliability testing technique utilized.

Results from reliability tests showed that the Safety Briefing Implementation variable had a Cronbach's Alpha of 0.907 and the Safe Work Behavior variable had a value of 0.837. All statement items in both variables exhibit a high degree of consistency, as both values are higher than the specified criterion limit of 0.60. As a result, we can confidently utilize the study instrument to analyze data on the factors of safety briefing implementation and safe work behavior.

Classical Assumption Test

For the regression analysis to be deemed BLUE (Best Linear Unbiased Estimator), it was necessary to perform the classical assumption test to guarantee that the data employed fulfilled statistical criteria. Normalcy, multicollinearity, heteroscedasticity, and linearity are some of the standard assumption tests that were used in this research.

Normality Test

The purpose of the normalcy test is to ascertain whether the data used in the study follows a normal distribution. The test is run using either a standard P-P plot or the Kolmogorov-Smirnov technique. If the p-value is greater than 0.05 or the data points show a straight line distribution, we say that the data is normally distributed. We may go further with the regression analysis if the data follows a normal distribution.

Table 7. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		143
Normal Parameters[a,b]	Mean	0,0000000
	Std. Deviation	2,60953771
Most Extreme Differences	Absolute	0,059
	Positive	0,059
	Negative	-0,055
Test Statistic		0,059
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: Data processed by researchers, 2026

A significance level of 0.200 was determined by carrying out a Kolmogorov-Smirnov test on unstandardized residuals. Since this number is higher than 0.05 (0.200 > 0.05), it follows that the study's data follow a normal distribution. Once the normalcy assumption is satisfied, the linear regression analysis may go on to evaluate hypotheses and additional classical assumptions.

Multicollinearity Test

To find out whether the independent variables in the regression model are highly related to each other, the multicollinearity test is used. The values of the Tolerance and Variance Inflation Factor (VIF) are examined to conduct the test. If both the Tolerance and VIF values are more than 0.10 and less than 10, the regression model is said to be free from multicollinearity. Multicollinearity occurs when these requirements are not satisfied by the independent variables.

Table 8. Multicollinearity Test Results

Coefficients[a]			
		Collinearity Statistics	
Model		Tolerance	VIF
1	X1_TOTAL	1,000	1,000
a. Dependent Variable: Y1_TOTAL			

Source: Data processed by researchers, 2026

The Safety Briefing Implementation variable (X) achieved a tolerance value of 1,000 and a VIF value of 1,000 according to the findings of the multicollinearity test. Both the tolerance value (>0.10) and the VIF value (<10) are satisfied. Hence, multicollinearity is not present in the regression model used for this investigation.

Heteroscedasticity Test

Finding out whether the residual variance is unequal among the regression model's data is the goal of the heteroscedasticity test. A scatterplot or the Glejser test is used for testing. The regression model is deemed free of heteroscedasticity if the points on the scatterplot do not exhibit any discernible pattern and are distributed randomly.

Table 9. Heteroscedasticity Test Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,176	1,778		1,224	0,223
	X1_TOTAL	-0,004	0,046	-0,007	-0,083	0,934
a. Dependent Variable: ABS_RES						

Source: Data processed by researchers, 2026

Based on the results of the Glejser test, the significance value for the Safety Briefing Implementation variable (X) was 0.934. This value is greater than 0.05 (0.934 > 0.05), so it can be concluded that the regression model does not exhibit heteroscedasticity.

Linearity Test

One way to find out whether the connection between the two variables was linear was to do the linearity test. The SPSS Test for Linearity analysis was used to perform the test. A significance score greater than 0.05 in the Deviation from Linearity row indicates that the connection is linear. The variables' connection is considered non-linear if the significance value is less than 0.05.

Table 10. Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Y1_TOTAL * X1_TOTAL	Between Groups	(Combined)	532,368	16	33,273	5,010	0,000
		Linearity	402,115	1	402,115	60,554	0,000
		Deviation from Linearity	130,252	15	8,683	1,308	0,207
	Within Groups		836,723	126	6,641		
	Total		1369,091	142			

Source: Data processed by researchers, 2026

Based on the results of the linearity test, the significance value in the Deviation from Linearity row was 0.207. This value is greater than 0.05 (0.207 > 0.05), so it can be concluded that there is a linear relationship between the variables of Safety Briefing Implementation and Worker Safe Behavior. With the linearity assumption met, simple linear regression analysis can be continued to test the influence between variables.

Simple Linear Regression Test

Multiple linear regression analysis is used to determine the effect of two or more independent variables on one dependent variable. The regression equation model in this study is:

Y=a+b1X1+b2X2+...+bnXn+e

Where Y is the dependent variable, a is the constant, b is the regression coefficient, X is the independent variable, and e is the error. The analysis was performed using SPSS.

Table 11. Simple Linear Regression Test Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	21,937	2,842		7,718	0,000
	X1_TOTAL	0,561	0,073	0,542	7,657	0,000

a. Dependent Variable: Y1_TOTAL

Source: Data processed by researchers, 2026

A simple linear regression analysis was conducted to determine the effect of Safety Briefing Implementation (X) on Worker Safe Behavior (Y). Based on the analysis results using SPSS, the following regression equation was obtained:

Y=21.937+0.561X

This equation can be interpreted as follows:

1) The constant of 21.937 indicates that if Safety Briefing Implementation (X) is zero or absent, then the predicted value of Worker Safe Behavior (Y) is 21.937.

2) The regression coefficient of variable X is 0.561, which is positive, meaning that every 1-unit increase in Safety Briefing Implementation will increase Worker Safe Behavior by 0.561 units. This indicates that the better the safety briefing implementation, the higher the worker safe behavior.

Coefficient of Determination Test

The coefficient of determination test is used to determine the extent to which the independent variable can explain the dependent variable. The coefficient of determination is indicated by the Adjusted R Square value. The closer it is to 1, the greater the contribution of the independent variable to the dependent variable.

Table 12. Results of the Coefficient of Determination Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.542[a]	0,294	0,289	2,619

a. Predictors: (Constant), X1_TOTAL

Source: Data processed by researchers, 2026

The R-square value of 0.294 indicates that the implementation of Safety Briefings contributed 29.4% to the influence of Worker Safe Behavior at PT PLN Power UP Gresik. The remaining 70.6% was influenced by other factors not examined in this study, such as occupational safety culture, OHS supervision, the work environment, and individual worker factors.

Hypothesis Testing

Hypothesis testing was conducted to verify the preliminary research assumptions, both partially and simultaneously. Hypothesis testing in this study used the t-test and F-test with a significance level of 5% (α = 0.05).

Partial Test

The t-test was used to determine the effect of each independent variable individually on the dependent variable. The decision-making criteria were:

a) If the sig. <0.05 or the calculated t-value > the t-table, the hypothesis is accepted.

b) If the sig. <0.05 or the calculated t-value <t-table, the hypothesis is rejected.

Table 13. T-Test Results (Partial Test)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	21,937	2,842		7,718	0,000
	X1_TOTAL	0,561	0,073	0,542	7,657	0,000

a. Dependent Variable: Y1_TOTAL

Source: Data processed by researchers, 2026

The results of this study indicate a positive and significant influence between the implementation of Safety Briefings and worker safety behavior at PT PLN Power UP Gresik.

Based on the regression analysis, a regression coefficient of 0.561 was obtained with a significance value of 0.000, which is less than 0.05. This indicates that the better the implementation of Safety Briefings by the company, the greater the improvement in worker safety behavior. This finding confirms that Safety Briefings serve as an effective safety communication medium in shaping worker awareness, attitudes, and actions to always work according to OHS procedures.

The F test (Simultaneous)

The F test is used to determine the effect of all independent variables simultaneously on the dependent variable. The decision-making criteria are:

a) If the sig. <0.05 or the calculated F value > the F table, then the independent variables simultaneously have a significant effect on the dependent variable.

b) If the sig. <0.05 or the calculated F value <F table, then there is no significant simultaneous effect.

Table 14. Results of the f-Test (Simultaneous)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	402,115	1	402,115	58,635	.000[b]
	Residual	966,976	141	6,858		
	Total	1369,091	142			
a. Dependent Variable: Y1_TOTAL						
b. Predictors: (Constant), X1_TOTAL						

Source: Data processed by researchers, 2026

Based on the results of the F-test analysis, the calculated F-value was 58.635 with a significance level of 0.000, which is less than 0.05. Therefore, it can be concluded that the implementation of Safety Briefings simultaneously has a significant effect on Worker Safe Behavior at PT PLN Power UP Gresik. These results indicate that the regression model used in the study met model feasibility and adequately explained the relationship between the independent and dependent variables. Thus, the implementation of Safety Briefings has been shown to play a significant role in shaping and improving worker safe behavior. The more effective the implementation of Safety Briefings, the higher the level of safe behavior demonstrated by workers in the workplace.

Discussion

The results of this study indicate that the implementation of Safety Briefings has a positive and significant effect on worker safe behavior at PT PLN Power UP Gresik. This means that the better the implementation of safety briefings, the higher the level of safe behavior displayed by workers. These findings align with previous research examining the effectiveness of Safety Training and Safety Briefings on occupational safety behavior. Safety briefings were proven effective in increasing safety knowledge and shaping workers' safety behavior in an industrial workplace (at PT Guna Elektro), enabling workers to better understand safety principles and apply them in their daily workplace activities. Furthermore, other research has found that effective safety talk implementation significantly impacts workers' safety behavior at PT Pelindo Terminal Petikemas New Makassar Terminal II, with statistical significance supporting a positive relationship between safety talk implementation (part of the Safety Briefing practice) and workers' OHS behavior (Ananda et al., 2023). These findings reinforce the point that safety communication through briefings or safety talks before work begins serves not only to convey technical information but also to have tangible behavioral implications, namely increased awareness, mental readiness, and compliance with occupational safety standards.

Theoretically, the results of this study are consistent with occupational safety literature, which emphasizes the important role of communication and education in shaping safe behavior. The Safety Briefing process enables workers to understand potential hazards, safe procedures, and the consequences of unsafe acts, thus contributing to changes in workplace attitudes and practices. Research in other contexts also shows that the promotion of safety aspects such as OHS communication, training, and supervision have a significant relationship with worker safety behavior in industrial environments, demonstrating the importance of safety information as a determinant of occupational safety behavior (Ruddin, 2023). Therefore, the effective implementation of Safety Briefings is part of a concrete OHS management strategy to improve worker safety behavior, reduce the risk of accidents, and strengthen the overall safety culture of the organization.

CONCLUSION

Based on the research results and discussion, it can be concluded that the implementation of Safety Briefings has a positive

and significant impact on worker safety behavior at PT PLN Power UP Gresik. The regression analysis shows that the better the quality of the Safety Briefings, both in terms of content, delivery methods, and consistency of implementation, the higher the level of safe behavior demonstrated by workers. The contribution of Safety Briefings to worker safety behavior is quite strong, indicating that Safety Briefings are an important factor in preventing workplace accidents. Therefore, the research hypothesis stating a relationship between Safety Briefings and worker safety behavior is accepted and empirically proven.

RECOMMENDATIONS

Based on these conclusions, it is recommended that the management of PT PLN Power UP Gresik continue to maintain and improve the quality of Safety Briefings, particularly by enriching the material with more applicable content tailored to field work conditions and using more interactive delivery methods. Leaders or officers providing briefings need to ensure that each worker fully understands potential hazards and safe work procedures before beginning work. Furthermore, companies are advised to combine Safety Briefings with other OHS programs, such as routine supervision, safety training, and PPE compliance evaluations, to strengthen a work safety culture. Future researchers are advised to add other variables, such as safety culture, OHS leadership, or the work environment, to provide a more comprehensive picture of the factors influencing worker safety behavior.

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