

The Influence of Safety Briefing, Knowledge and Awareness of Occupational Safety and Health in Realizing Zero Accidents in the Work Environment

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ABSTRACT

Occupational safety is an important aspect of the work environment, especially in high-risk building operations. This study is expected to provide recommendations for companies, especially shopping centers in Indonesia, to improve occupational safety programs. Increasing occupational safety knowledge and awareness is expected to create zero accidents. This study uses a quantitative approach with a survey research design. The data obtained will be analyzed using the SPSS application. The t-test was conducted to compare the average knowledge and awareness of occupational safety before and after attending a safety briefing. In addition, regression analysis will be used to identify factors that influence the increase in occupational safety knowledge and awareness. This study shows that there is a strong relationship (84%) between the implementation of safety briefings, knowledge, and awareness of K3 in realizing zero accidents in the work environment.

Keywords:

Safety Briefing, K3
Knowledge, K3
Awareness, Zero
Accident

INTRODUCTION

In the current development in Indonesia, the implementation of ESG (Environmental, Social, and Governance) is a standard used by companies, investors, and organizations to measure the sustainability and impact of corporate social responsibility. ESG is a framework that assesses the extent to which an entity pays attention to environmental, social, and governance factors in its operations. This standard is important in supporting long-term goals, sustainability, and providing added value to stakeholders. The implementation of ESG is not only driven by regulations, but also by increasing market and investor demands to ensure that companies are environmentally, socially, and governance responsible. The implementation of ESG (Environmental, Social, and Governance) has a legal basis that refers to various laws and regulations, including Law Number 32 of 2009 concerning Environmental Protection and Management, and Law Number 13 of 2003 concerning Manpower Regulating workers' rights, welfare, and protection of workers. Occupational safety is a very important aspect of every work environment, especially in industries that have high risks. According to data from the Social Security Administering Agency (BPJS) Employment, in 2020 there were more than 100,000 work accidents reported in Indonesia, with a death toll reaching 1,500 cases (BPJS Employment, 2021). Work accidents not only impact the health and safety of workers but also affect the productivity and reputation of the company. Therefore, efforts to achieve Zero Accident conditions must be a top priority.

One method that has been proven effective in increasing knowledge and awareness of work safety is through safety briefings. Safety briefings are short training sessions that provide important information about safety procedures, potential risks,

and ways to avoid accidents. Research by HSE (Health and Safety Executive, 2019) shows that companies that routinely conduct safety briefings have lower work accident rates compared to companies that do not.

In this context, this study aims to analyze the effect of safety briefings on knowledge and awareness of work safety in the work environment. By using quantitative research methods, it is hoped that valid and reliable data can be obtained regarding the effectiveness of safety briefings in realizing Zero Accidents. This study will also discuss other factors that can affect the results, such as workplace safety culture and employee participation in safety programs. In previous research by Aksorn and Hadikusumo (2008) in a journal study entitled "Measuring the effectiveness of safety programs in the Thai construction industry", it was shown that routine implementation of safety briefings can increase occupational safety knowledge by up to 40%. In addition, research by Hallowell and Gambatese (2010), in the study "Safety Risk Management in Construction" found that companies that implemented effective safety briefing programs experienced a decrease in work accidents by up to 25%. These results indicate that safety briefings have a significant positive impact on occupational safety during the construction process. Meanwhile, the research conducted this time will discuss more about the relationship between safety briefings and occupational safety knowledge and awareness to realize zero accidents in the work environment, but in the scope of buildings that are already operational, especially in shopping centers. Shopping centers that have now changed function, are not only a place for people to shop, but have now also become a gathering place for various groups, both for socializing, traveling, or as a business center and meeting between colleagues. With these developments, shopping centers will become one of the centers of significant economic and business turnover. So it is necessary to be one of the management's concerns to increase awareness of occupational safety. Through this research, it is expected to provide recommendations for companies, especially in shopping centers in Indonesia, to improve their occupational safety programs. By increasing knowledge and awareness of occupational safety, it is hoped that the number of work accidents can be reduced so that the goal of Zero accidents is achieved. This is in line with the vision of the Indonesian government to create a safe and healthy work environment for all workers.

The literature review in this study will discuss several basic concepts related to occupational safety, safety briefings, and Zero Accidents. First, occupational safety is defined as an effort to protect workers from risks that can result in accidents or occupational diseases. According to ISO 45001:2018, the occupational safety and health management system aims to improve occupational safety performance through effective risk management (ISO, 2018).

Second, safety briefings are an integral part of the occupational safety management system. Routine safety briefings can increase workers' awareness and knowledge of the risks in the workplace. Research by Geller (2001) shows that workers involved in safety briefings have a better understanding of safety procedures and are more likely to comply with established rules.

Third, the concept of Zero Accidents refers to the goal of eliminating all workplace accidents. This concept is not just a target but also reflects the organization's commitment to worker safety. According to research by Roughton and Mercurio (2002), to achieve Zero Accidents, there needs to be a change in the safety

culture in the workplace, where each individual feels responsible for the safety of themselves and their coworkers.

In this context, this study will examine how safety briefings can contribute to increasing knowledge and awareness of occupational safety. In addition, this study will also consider other factors that may affect the effectiveness of safety briefings, such as frequency of implementation, delivery methods, and employee involvement.

In this study, it is important to consider other factors that may affect the results of the study. For example, workplace safety culture can play an important role in determining how effective safety briefings are. Research by Zohar (2002) shows that companies with a strong safety culture tend to have lower rates of workplace accidents. Therefore, further analysis is needed on the relationship between safety culture and the effectiveness of safety briefings.

In addition, active employee participation in safety briefings can also affect the results. Employees who feel involved and contribute to safety discussions tend to have better knowledge and awareness. Research by Mearns and Flin (2003) shows that employee involvement in safety programs can increase the effectiveness of safety training.

METHOD

The methodology of this study uses a quantitative approach with a survey research design. The population in this study were employees of the Engineering department at a shopping center who interact directly with the safety briefing program routinely, with a population of 32 people. The research sample will be taken randomly from employees who attended the safety briefing in a certain period using saturated sampling, due to the small population. Data will be collected through a questionnaire designed to measure knowledge and awareness of work safety before and after attending the safety briefing. The questionnaire will consist of several parts, including: (1) Regarding the implementation of safety briefing, (2) Knowledge of work safety, and (3) Awareness of the importance of work safety. Knowledge will be measured with questions related to safety procedures and risks in the workplace. Awareness will be measured through questions regarding respondents' attitudes and behaviors toward work safety. Research variables: (X1) Safety briefing, (X2) K3 knowledge, (X3) K3 awareness, (Y) Realizing zero accidents in the work environment. The hypothesis made: (H1) Safety briefing can realize zero accidents in the workplace, (H2) K3 knowledge can realize zero accidents in the workplace, (H3) K3 awareness can realize zero accidents in the work environment, (H4) Safety briefing, K3 knowledge, and awareness can realize zero accidents in the work environment.

The data obtained will be analyzed using descriptive and inferential statistical techniques. The t-test will be conducted to compare the average knowledge and awareness of work safety before and after attending the safety briefing. In addition, regression analysis will be used to identify factors that influence the increase in knowledge and awareness of work safety. This study is expected to provide a clear picture of the effect of safety briefings on knowledge and awareness of work safety. The results of this study are also expected to be a reference for companies in designing more effective work safety programs.

RESULTS AND DISCUSSION

The results of this study are expected to show a significant increase in knowledge and awareness of occupational safety after attending a safety briefing. Initial data collected before the implementation of the safety briefing will be the baseline for measuring the changes that occur. Through statistical analysis, it is expected to obtain valid information regarding the effectiveness of safety briefings in increasing knowledge and awareness of occupational safety.

RESULTS

1. Statistic Descriptive

Table: I
Descriptive Statistics

	Mean	Std. Deviation	N
Realizing zero accidents in the work environment	17,7500	1,77012	16
Safety briefing	22,3125	2,18232	16
K3 Knowledge	26,5000	2,52982	16
K3 Awareness	21,8750	2,24722	16

From the table above, the mean value (average value) for the variable Realizing zero accidents in the work environment is 17.750, for the variable Implementation of safety briefing 22.312, for the variable Knowledge of K3 26.500 and for the variable Awareness of K3 21.875. The standard deviation for the variable Realizing zero accidents in the work environment is 1.770, for the variable Implementation of safety briefing 2.182, for the variable Knowledge of K3 2.530, and for the variable Awareness of K3 2.247. The number of respondents for each variable is 16.

2. Normality Test

Table: II
One-Sample Kolmogorov-Smirnov Test

		Safety briefing	K3 Knowledge	K3 Awareness	Realizing zero accidents in the work environment
N		16	16	16	16
Normal Parameters ^b	Mean	22,3125	26,5000	21,8750	17,7500
	Std. Deviation	2,18232	2,52982	2,24722	1,77012
Most Extreme Differences	Absolute	,168	,266	,235	,227
	Positive	,168	,266	,235	,227
	Negative	-,155	-,229	-,168	-,211
Kolmogorov-Smirnov Z		,671	1,063	,942	,906
Asymp. Sig. (2-tailed)		,758	,208	,338	,384

a. Test distribution is Normal.

b. Calculated from data.

Data Normality Test In the Kolmogorov-Smirnov Test, the Asymp. The Sig. (2-tailed) value indicates the level of significance of the normality test results. If the Asymp. Sig. Value > 0.05, then the data distribution is considered normal. The Role of Safety Briefing: Sig. Value 0.758 (> 0.05), so the data distribution is normal. K3 Knowledge: Sig. Value 0.208 (> 0.05), so the data distribution is normal. K3 Awareness: Sig. Value 0.338 (> 0.05), so the data distribution is normal. Realizing zero accidents in the work environment: Sig. Value 0.384 (> 0.05), so the data distribution is normal. The results of the Kolmogorov-Smirnov test show that the data

for the four variables have a normal distribution. Thus, parametric statistical analysis can be performed for this data.

3. Hypothesis Test

Table: III Coefficients

Model	Coefficients			t	Sig.	Correlations		
	Unstandardized Coefficients		Standardized Coefficients			Zero-order	Partial	Part
	B	Std. Error	Beta					
(Constant)	,183	2,559		,072	,944			
1 Safety briefing	,040	,140	,049	,286	,780	,539	,082	,033
K3 Knowledge	,462	,215	,661	2,156	,052	,908	,528	,249
K3 Awareness	,202	,199	,256	1,016	,330	,830	,281	,117

a. Dependent Variable: Realizing zero accidents in the work environment

From the coefficient table above, the constant $b_0 = 0.183$ is obtained. Regression coefficient $b_1 = 0.040$, $b_2 = 0.462$ & $b_3 = 0.202$. So the multiple linear regression equation is $Y' = 0.183 + 0.040X_1 + 0.462X_2 + 0.202X_3$

Hypothesis A0:b1

From the results of the analysis as summarized in the table, the statistical value for the coefficient X_1 is $t \text{ count} = 0.286$ and $p\text{-value} = 0.780/2 = 0.390 > 0.05$ or H_0 is accepted, meaning that the implementation of safety briefing has no positive effect on the realization of zero accidents in the work environment. The statistical value for the coefficient of variable $X_2 = 2.156$ with $p\text{-value} = 0.052/2 = 0.026 < 0.05$ or H_0 is rejected, meaning that K3 knowledge has a positive effect on the realization of zero accidents in the work environment. The statistical value for the coefficient of variable $X_3 = 1.016$ with $p\text{-value} = 0.330/2 = 0.165 > 0.05$ or H_0 is accepted, realizing that K3 awareness has no positive effect on the realization of zero accidents in the work environment.

Table: IV ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39,458	3	13,153	20,929	,000 ^b
	Residual	7,542	12	,628		
	Total	47,000	15			

a. Dependent Variable: Realizing zero accidents in the work environment

b. Predictors: (Constant), K3 Awareness, Safety briefing, K3 Knowledge

From the results of the analysis summarized in the ANOVA table above, the F statistic value is obtained, namely $F \text{ count} = 20.929$ and $p\text{-value} = 0.000 < 0.05$ or this means that H_0 is rejected, meaning that there is a linear effect of the variable of the implementation of safety briefing which has a positive effect on realizing zero accidents in the work environment. This also means that there is a relationship together and simultaneously between the implementation of safety briefings, knowledge of K3, and awareness of K3 which has a positive effect on realizing zero accidents in the work environment.

Table: V
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,916 ^a	,840	,799	,79275	,840	20,929	3	12	,000

a. Predictors: (Constant), K3 Awareness, Safety briefing, K3 Knowledge

The significance test of the multiple correlation coefficient is obtained from the model summary table above. It can be seen that the multiple correlation coefficient $R_{Y123} = 0.916$ F count = 20.929 and p-value = 0.000 < 0.05 or H_0 is rejected, thus the multiple correlation coefficient between X1, X2, and X3 with Y is significant, while the determination coefficient is shown by R Square = 0.840 which means that 84% of the variability of the variable. Realizing Zero Accidents in the Work Environment (Y) can be explained by the Implementation of Safety Briefing (X1), K3 Knowledge (X2), and K3 Awareness (X3) so that it can be concluded that the Relationship between the Implementation of Safety Briefings, K3 Knowledge, and K3 Awareness together in Realizing Zero Accidents in the Work Environment is 84%.

Partial Correlation Coefficient Significance Test

a. Correlation between the Implementation of Safety Briefing and Realizing Zero Accidents in the Work Environment by Controlling K3 Knowledge (X2) & K3 Awareness (X3).

Table: VI Correlations (a)

Correlations			Realizing zero accidents in the work environment	Safety briefing
Control Variables	Realizing zero accidents in the work environment	Correlation	1,000	,082
		Significance (1-tailed)	.	,390
		df	0	12
	Safety briefing	Correlation	,082	1,000
		Significance (1-tailed)	,390	.
		df	12	0

From the results of the analysis in the table above, it was obtained that $r_{y1.2.3} = 0.82$ and p-value = 0.390 > 0.05 or H_0 is accepted, thus the correlation coefficient between the Implementation of Safety Briefing and Realizing Zero Accidents in the Work Environment by controlling the variables of K3 Knowledge and K3 Awareness is significant.

b. Correlation between Realizing zero accidents in the work environment and K3 Knowledge by controlling the Implementation of Safety Briefing (X1) and K3 Awareness (X3)

Table: VI Correlations (b)

Correlations			Realizing zero accidents in the work environment	K3 Knowledge
Control Variables	Realizing zero accidents in the work environment	Correlation	1,000	,528
		Significance (1-tailed)	.	,026
		df	0	12
	K3 Knowledge	Correlation	,528	1,000
		Significance (1-tailed)	,026	.
		df	12	0

From the results of the analysis in the table above, it was obtained that $r_{y2.1.3} = 0.528$ and $p\text{-value} = 0.026 < 0.05$ or H_0 was rejected, thus the correlation coefficient between K3 Knowledge and Realizing zero accidents in the work environment by controlling the variables of K3 Awareness and Implementation of safety briefings is not significant.

c. Correlation between Realizing zero accidents in the work environment and K3 Awareness by controlling the Implementation of Safety Briefing (X1) & K3 Knowledge (X2).

Table: VII Correlations (c)

Control Variables		Correlations	
		Realizing zero accidents in the work environment	K3 Awareness
Safety briefing & K3 Knowledge	Realizing zero accidents in the work environment	Correlation	1,000
		Significance (1-tailed)	,281
		df	12
	K3 Awareness	Correlation	,281
		Significance (1-tailed)	,165
		df	12

From the results of the analysis in the table above, it was obtained that $r_{y3.1.2} = 0.281$ and $p\text{-value} = 0.165 > 0.05$ or H_0 is accepted, thus the correlation coefficient between K3 Awareness and Realizing zero accidents in the work environment by controlling the variables of Implementation of Safety Briefing and K3 Knowledge is significant.

Discussion

The findings of this study reveal several key insights regarding the factors influencing the realization of zero accidents in the work environment. First, the implementation of safety briefings does not have a significant positive effect on achieving zero accidents. However, K3 knowledge demonstrates a positive influence on realizing a zero-accident workplace, indicating that understanding safety protocols plays a crucial role in preventing incidents. Similarly, K3 awareness also positively impacts the achievement of zero accidents, highlighting the importance of employees' attentiveness and commitment to safety practices. Furthermore, there is a simultaneous and joint positive effect of safety briefing implementation, K3 knowledge, and K3 awareness on realizing zero accidents. These results align with the theories proposed by Aksorn and Hadikusumo (2008) and the findings of Hallowell and Gambatese (2010), which emphasize the strong relationship between safety practices and accident prevention. The research hypothesis is thus supported by empirical evidence, affirming the critical role of knowledge and awareness in workplace safety.

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CONCLUSION

Based on the discussion above, it can be concluded that there is a simultaneous and joint relationship between the implementation of safety briefing, knowledge of K3, and awareness of K3 which has a positive effect on realizing zero accidents in the work environment. Through the implementation of routine and effective safety briefings, companies can improve employee understanding of existing safety

procedures and risks, which in turn can contribute to Realizing Zero Accidents in the Work Environment significantly by 84%. However, to achieve optimal results, companies also need to pay attention to other factors such as safety culture and employee participation. This study is expected to provide insight and recommendations for companies to design better work safety programs so that they can create a safe and healthy work environment for all employees.

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