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The Effect of Basic Fire Fighting Training and Instructor Experience on the Work Skills of Employees in the Fire Department of SKK Migas ENI Jakarta

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Abstract

One of the most real risks in the workplace, one that can occur at any time, is fire. This is especially true in the oil and gas sector, where the potential for fire is particularly high due to the direct interaction with fuel, chemicals, and high-pressure work processes. Therefore, employees in this sector are required to have adequate skills in dealing with emergencies, especially those related to fires. There are a number of problems identified in relation to handling emergency conditions, including differences in employee ability to absorb training materials, limited training resources, and the level of employee participation in training, which is greatly influenced by individual motivation and involvement. Difficulties in assessing post-training skills, due to the lack of effective evaluation methods in measuring quantitative skill improvements, the lack of continuous monitoring and evaluation post-training, so that information regarding program effectiveness and further development needs is often not well documented. The purpose of this study was to determine the effect of basic firefighting training and instructor experience on the work skills of SKK Migas ENI employees in Jakarta. The research method used was the survey method. The analysis method used was multiple linear regression analysis. The results of the study showed that basic firefighting training and instructor experience had a positive and significant effect, both partially and simultaneously, on employee work skills. This shows that the training provided and the experience of the instructors are able to improve the technical capabilities and preparedness of SKK Migas ENI Jakarta employees in facing emergency situations, which ultimately has an impact on employee work skills in facing fire emergency situations in the workplace.

Keywords: Basic Firefighting Training, Instructor Experience, Work Skills

1. Introduction

Occupational Health and Safety in the Oil and Gas Sector, better known as K3 Migas, is something that cannot be ignored in the oil and gas industry. One of the most obvious OSH risks faced in the oil and gas sector work environment is the high potential for fire hazards due to company operations that are directly related to the management of fuel, chemicals, and high-pressure work processes. Therefore, employees in the oil and gas sector are required to have adequate skills in dealing with emergencies, especially those related to fire.

Research conducted in the pool land transport area, as one of the units that plays an important role in supporting the operational mobility of SKK Migas ENI Jakarta, has a fairly high potential for fire risk. A number of phenomena found indicate a low work culture that is alert and concerned about occupational safety aspects, as well as low employee knowledge and skills in dealing with potential fires that can occur at any time in the workplace. The lack of continuous monitoring and evaluation after training means that information about the effectiveness of the program and further development needs is often not well documented. The lack of variety in training standards leads to inconsistencies in the level of employee skills in dealing with potential fires.

Basic Fire Fighting training is an urgent necessity for SKK Migas Eni Jakarta employees, where operational risks tend to be higher due to the complexity of processes and the intensity of business activities. Basic Fire Fighting Training is designed to equip employees with theoretical understanding and practical skills in firefighting, ranging from identifying sources of fire, using fire extinguishers, effective evacuation strategies, to coordination in

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emergency situations. With these skills, employees are expected to be able to respond quickly and appropriately to emergency conditions, thereby minimizing potential loss of life and property. In addition, this training plays an important role in shaping a work culture that is alert and concerned about safety aspects. To maintain the effectiveness of the skills acquired, basic fire fighting training should ideally be conducted periodically, at least every two years. This is important considering that skills that are not continuously honed tend to decline. Based on previous research, employees begin to forget most of the training material after three years if it is not practiced regularly. In fact, if training is not conducted within a five-year period, most employees, especially new employees, can lose their basic knowledge and skills altogether, which ultimately has the potential to endanger work safety when an incident occurs.

In addition to the frequency of training, the quality of instructors is also a determining factor in efforts to improve employee skills in dealing with fires that occur in the workplace. Instructors with practical field experience tend to be able to deliver material in a more applicable, relevant, and contextual manner. The real-world experience possessed by instructors enables them to provide a more concrete picture of the challenges and handling of actual fire situations. Thus, the combination of structured training and adequate instructor experience can have a significant impact on improving the work skills of SKK Migas ENI Jakarta's fire department employees.

2. Research Methods

This study uses a quantitative method with a survey approach. The location of the study is SKK Migas ENI Jakarta. The population size is 81 people, and the sample size is 67 respondents. Data collection techniques use questionnaires, and respondents' answers are quantified using a Likert scale. The data analysis method used multiple linear regression analysis with the regression equation $Y = a + b_1X_1 + b_2X_2 + \epsilon$. The hypothesis was tested partially using the t-statistic test, with the criteria $t_{count} > t_{table}$, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted, indicating that there was a partial effect of the independent variable on the dependent variable. Simultaneous hypothesis testing uses F statistics with the criteria $F_{count} > F_{table}$, null hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted, concluding that there is a joint effect of independent variables on the dependent variable.

3. Results

The results of the study using statistical analysis tools such as regression tests and hypothesis tests found the following:

Table 3.1 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	,666 ^a	,443	,426	1,21498	,443	25,460	2	64	,000

a. Predictors: (Constant), Pengalaman, Pelatihan

The data processing results reflect a correlation coefficient (R) of 0.666. The positive correlation coefficient value indicates that basic firefighting training and instructor experience have a direct relationship with the work skills of SKK Migas ENI Jakarta firefighting employees. This means that if training and instructor experience are improved, it will have an impact on improving the work skills of firefighting employees. The correlation coefficient of 0.666 is in the interval of 0.601-0.800, which indicates that basic firefighting training and instructor experience have a strong correlation with the work skills of employees at SKK Migas ENI Jakarta.

The coefficient of determination (adjusted R Square) value of 0.443 or 44.3% indicates that 44.3% of the increase in the work skills of firefighting employees can be explained by basic firefighting training and instructor experience together, while 55.7% can be explained by other variables outside the variables studied.

Table 3.2 Regression test results
Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	11,386	,935		12,177	,000
Pelatihan	,216	,048	,421	4,518	,000
Pengalaman Instruktur	,202	,037	,514	5,511	,000

a. Dependent Variable: Work Skills

The regression coefficient values for instructor training and experience found from the regression test results can be analyzed using the following linear regression equation:

$$Y = a + b_1X_1 + b_2X_2 + e$$

$$Y = 11,386 + 0,216 X_1 + 0,202 X_2 + e.$$

The results of the study show that basic firefighting training has a regression coefficient of 0.216, which means that every increase in the value of basic firefighting training can have an impact on increasing the work skills of SKK Migas ENI firefighters by 0.216 or 21.6%. This shows that basic firefighting training has an impact on improving the technical skills of employees, their speed and accuracy at work, their problem-solving abilities, and their ability to adapt to new situations. Basic firefighting training equips SKK Migas ENI employees with technical awareness and knowledge about the causes of fires, prevention methods, and how to use fire extinguishers, both light fire extinguishers (APAR) and other fire extinguishing equipment, correctly and safely. It also trains employees on how to evacuate themselves and others from a fire area safely, including the use of evacuation routes and emergency equipment. Basic firefighting training teaches employees how to provide first aid to victims of minor burns, such as bandaging wounds and mobilizing victims. Through training and simulations, employees are taught to remain calm so that they can respond quickly and appropriately in an emergency. Thus, basic firefighting training is not only useful in emergency situations, but also has an impact on improving employee work skills.

The instructor's experience has a regression coefficient of 0.202, which means that every increase in the instructor's experience value can have an impact on an increase of 0.202 or 20.2% on the improvement of the work skills of SKK Migas ENI Jakarta fire department employees. This shows that with their practical background and extensive experience in the field of firefighting, instructors are able to explain firefighting theory in a more applicable context. They can also provide insight into the challenges and obstacles that may be encountered in the field and teach the best strategies for dealing with them. In addition, experienced instructors can use more varied teaching methods, such as fire simulations, case studies, and hands-on training, making it easier for participants to understand and remember the material. Thus, the more experienced the instructor, the higher the work skills of employees in handling emergency situations.

Hypothesis Testing t-test (Partial)

The t-test used to answer the research question regarding the effect of basic firefighting training on the work skills of employees in the firefighting department of SKK Migas ENI Jakarta showed the following hypothesis test results:

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	11,386	,935		12,177	,000
Training	,216	,048	,421	4,518	,000
Experience	,202	,037	,514	5,511	,000

a. Dependent Variable: Work Skills

The results of the hypothesis test on the effect of training on the work skills of SKK Migas ENI Jakarta employees show a t-value (thitung) of 4.518 and a sig value of 0.000. The t-table value found at a degree of freedom (dk) of 65 and α of 0.05 is 0.1996. The test results show that $t_{count} > t_{table}$ ($4.518 > 0.1996$) and a sig value of $0.000 < 0.05$. From the hypothesis test results, it can be concluded that basic fire fighting training has a positive and significant effect on the work skills of SKK Migas ENI Jakarta firefighters. The results of this study are in line with the research conducted by Prasetyo (2021), which concluded that appropriate and continuous training, including Basic Fire Fighting training, has a positive and significant effect on improving employee work skills. This training not only improves technical abilities but also increases confidence and decision-making skills in emergency situations.

The results of the hypothesis test on the effect of instructor experience on the work skills of SKK Migas ENI Jakarta employees show a t-value (thitung) of 5.511 with a significance value of 0.000. By consulting the t-value of 5.511 against the t-table value of 0.1996 with a sig value of $0.000 < \alpha 0.05$, H_0 is rejected or H_a is accepted. The hypothesis test results conclude that there is a positive and significant effect of instructor experience on the work skills of SKK Migas ENI Jakarta employees. The results of this study are in line with the research by Chukwu, Kurniawan, and Manik (2023;19), which concluded that instructor experience has a positive effect on the achievement of training participants' competencies because experienced instructors are more responsive in adjusting teaching methods to the needs of participants. Furthermore, the results of the hypothesis test to answer the problem formulation of the combined influence of training and instructor experience on the work skills of SKK Migas ENI Jakarta employees show the following results:

ANOVAa

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>1 Regression</i>	75,167	2	37,583	25,460	,000b
<i>Residual</i>	94,475	64	1,476		
<i>Total</i>	169,642	66			

a. Dependent Variable: Work Skills

b. Predictors: (Constant), Experience, Training

The test results show that the Fcount value is 25.460 with a sig value of 0.000. The Ftable value at $\alpha 0.05$ is 2.70. Because the Fcount value, 25.460, is greater than the Ftable value, 2.70, H_0 is rejected and H_a is accepted. The hypothesis test results conclude that the combination of structured training and adequate instructor experience has a significant effect on improving employee work skills. This significant effect indicates that the research on a sample of 67 respondents can be generalized to all 81 employees of the SKK Migas ENI Jakarta fire department.

Simultaneously, the basic firefighting training variable and instructor experience have an adjusted R Square value of 0.443. This coefficient of determination value can be interpreted as meaning that 44.3% of the change in the work skills of SKK Migas ENI Jakarta firefighting employees can be explained by changes in training and instructor experience together, while the remaining 55.7% is explained by other variables outside the predictor variables studied in this research.

The impact of basic firefighting training will trigger an increase in work skills through the acquisition of new knowledge relevant to the field of work of SKK Migas ENI Jakarta fire department employees, improving the ability of employees to work in teams, communicate, and coordinate with colleagues to achieve common goals. In addition, the improvement in employee skills will be reflected in employee compliance with company regulations and responsibility in completing work, as well as the ability of employees to apply K3 principles in the work environment and compliance with safety procedures, especially in dealing with potential hazards such as fire.

Instructors with extensive field experience will not only teach theory, but also share real-world practices and responsive techniques for dealing with critical situations. Clear and easy-to-understand delivery of material will help employees absorb information better, thereby having a positive impact on their understanding and mastery of technical skills.

4. Discussions

1. The effect of basic firefighting training on employee work skills.

From the regression equation, it can be seen that basic firefighting training is a more dominant variable in improving employees' work skills in handling fire emergencies. This shows that basic firefighting training that is carried out appropriately and continuously has a positive and significant effect on improving employee work skills. Firefighting training in this study was designed so that all respondents had the same opportunity to learn both theoretical and practical material. All participants had the opportunity to practice. This is supported by research showing that fire safety must be taught using an approach of instruction, modeling, practice, and feedback. Instruction refers to information about the correct behavior in a given situation. Modeling refers to imitating the behavior demonstrated. Practice refers to practicing the newly learned behavior. Feedback refers to positive reinforcement when participants are able to practice correctly, while instructive feedback is given when participants are not yet able to practice correctly. Employees learn to identify types of fire hazards, understand how various types of fire extinguishers work, and master their correct and effective use, including evacuation procedures. Training participants are trained to assess the size and location of a fire and the available evacuation routes, which are crucial for quick and accurate decision-making. Regular fire drills ensure that everyone knows their specific role, whether it is using a fire extinguisher, calling for help, or clearing the area, thereby reducing panic and ensuring a quick and safe evacuation.

For workers, this training builds confidence in dealing with emergency situations, which directly impacts the effectiveness of their response. Research shows that firefighting is positively correlated with an increase in the work skills of SKK Migas ANI Jakarta employees. Trained employees tend to be more productive and efficient in carrying out their duties because they feel safer and more prepared. With the ability to effectively prevent and respond to fires, the risk of property damage, injury, and loss of life can be minimized, thereby contributing to the company's long-term profits and success. The training is rooted in the principle of risk-based occupational safety, which emphasizes prevention, preparedness, and rapid response in emergency situations. In addition, the training also uses a behavioral safety approach, where changing employee behavior towards safety is the main focus. These results reinforce the theory that training is a series of activities to provide, acquire, improve, and develop work competencies, productivity, discipline, attitude, and work ethic at a certain level of skill and expertise, in accordance with the level and qualifications of the position or job (Law Number 13 of 2003 concerning Manpower). The purpose of training is to increase productivity and improve quality, which are certainly one of the benchmarks of employee performance.

The results of this study are in line with research conducted by Prasetyo (2021), which shows that Basic Fire Fighting training has a significant positive effect on improving employee work skills. This training not only improves technical abilities but also increases confidence and decision-making skills in emergency situations. This research is in line with Purwanto's (2023) research, which states that basic firefighting training not only improves technical skills but also shapes emergency response attitudes and discipline towards safety protocols. This training is an important part of the Occupational Safety and Health (OSH) program at SKK Migas, which is classified as an industry with a very high risk of fire.

2. The influence of instructor experience on employee work skills.

From the regression equation, it is known that instructor experience has a positive influence on the work skills of SKK Migas ENI employees. This can be seen from the regression coefficient value, which shows a positive number of 0.202 with a degree of significance that is smaller than the standard significance value. Instructor experience is essential in improving employee skills. Instructor experience is the accumulation of knowledge, skills, and insights gained by instructors through their involvement in teaching, training, and mastery of the material being taught. This experience covers both technical and non-technical aspects, such as communication skills, classroom management, and the application of effective training methods. This study reinforces the theory of

Chukwu (2022), who states that instructor work experience greatly influences the quality of the learning process because experienced instructors are able to deliver material more clearly, provide practical examples, and manage

classroom dynamics better. The more often instructors encounter cases in the field, the richer the contextual material they can share with participants. Instructors who actively participate in the latest training tend to have more up-to-date knowledge and the ability to integrate theory with current practices. In addition to technical experience, the ability to teach and adapt to participants is a crucial factor in instructor effectiveness. Instructors with a practical background and extensive experience in the field of firefighting are able to provide more applicable insights, so that participants can understand the real context in the field. This experience allows instructors to answer participants' questions more comprehensively and provide solutions based on real events. Experienced instructors tend to have broader insights in delivering material, understanding various fire scenarios, and providing real examples relevant to participants' working conditions. In addition, instructors' experience in handling emergency situations in the field can increase their credibility in the eyes of participants, making training more interesting and effective. This reinforces Dessler's (2020) theory that instructors who are accustomed to receiving feedback from participants are usually quicker to adapt and improve the quality of their material delivery. Involvement in fire safety research and development can also enrich instructors' experience in understanding the latest firefighting techniques and more effective safety procedures. This study is in line with research by Chukwu, D. C., Kurniawan, D., & Manik, Y. D. (2023), which shows that instructor experience has a positive effect on the achievement of training participants' competencies, because experienced instructors are more responsive in adjusting teaching methods to the needs of participants.

5. Conclusion

Basic firefighting training has a positive and significant effect on employee work skills. This shows that basic firefighting training has an impact on improving employees' technical skills, work speed and accuracy, problem-solving abilities, and ability to adapt to new situations. Instructor experience has a positive and significant effect on employee work skills. This shows that experienced instructors can use more varied teaching methods, such as fire simulations, case studies, and hands-on training, making it easier for participants to understand and remember the material. The more experienced the instructor, the higher the employee's work skills in handling emergency situations. Basic firefighting training and instructor experience simultaneously have a positive and significant effect on employee work skills. This shows that improving employee knowledge, skills, and awareness, as well as the instructor's communication skills and practical experience, will collectively have an impact on improving technical skills, speed and accuracy in completing work, and the ability to solve problems and adapt to new situations faced by employees.

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