



Factors Associated with Preparedness Efforts of Production Employees in Facing Fire at PT. Kilang Lima Gunung Padang in 2023

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Abstract

In 2021 at PT Kilang Lima Gunung Padang there was a fire caused by 60% electrical short circuit or sparks from the central warehouse cable falling into crates containing 30% rubber material. The fire then spread very quickly. This resulted in a loss of around 5 billion. The impacts that occur when a fire occurs are human, material, environmental, economic, and social. The purpose of this study was to determine the factors associated with employee preparedness efforts in dealing with fires at PT Kilang Lima Gunung Padang in 2023. This type of quantitative research with a cross sectional design, the research time was carried out in March-August 2023. The sample in this study were all production employees totaling 52 people (total population). Data collection using a questionnaire by means of a questionnaire. Based on the results of the study, it shows that 51.9% of employees are not good with fire preparedness efforts, 65.4% of employees have a low level of knowledge, 57.7% of employees have a negative attitude, the availability of infrastructure is not complete (13.5%). There is a relationship between the level of knowledge with preparedness efforts in the face of fire ($p = 0.001$), attitude ($p = 0.006$) and there is no relationship between the availability of infrastructure with preparedness efforts in the face of fire ($p = 0.422$). Preparedness efforts are influenced by several factors, namely the level of knowledge and attitude. It is recommended to the company to conduct simulation training on fire preparedness efforts in the event of a fire employees are ready to face the fire.

Keywords: Attitude, Fire Preparedness Efforts, Knowledge Level

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INTRODUCTION

OHS or Occupational Safety and Health is an important part of industrialization. Occupational Safety and Health must be managed like production and financial management and other important company functions. One type of accident that is often encountered and The biggest loss is fire. Because if a fire occurs, many parties will be harmed, including investors, workers, the government and the wider community (Suma'mur, 2015).

The International Labor Organization (ILO) states that throughout the incident Worst of all in the world of occupational health and safety, industrial fires are a major casualty. Nearly 70% of employees die as a result of fires (ILO, 2018).

According to statistical data from the International Association of Fire and Rescue Service (CTIF), there were 10,8000,00 fire cases in the world in 2018-2020. From these fires, as many as 3,400 civilians died in these fires and 77% of all deaths were caused by fires, besides

this incident occurred in many countries (CTIF, 2022).

Fire disasters that occur in various regions of other countries, such as Indonesia. Based on data submitted by the National Disaster Management Agency (BNPB) from 2020 to the year there were 865 cases (BNPB, 2021). Then based on what was stated by the Central Bureau of Statistics of Padang City in 2017-2021, there were 270 cases of fire that occurred in Padang City (BNPB, 2021).

The level of knowledge is the aftereffect of an individual's desire regarding objects through their senses. Each individual has unequal knowledge because each person's sensing of an object is different. Knowledge consists of 6 levels, namely: know, (know), understand (comprehension), application (application), analysis (analysis), synthesis (synthesis) and evaluation (evaluation). With good knowledge, a person will easily interpret, a person's ability to form a model that describes understanding, analyzing, synthesizing problems and making truly objective decisions (Notoatmodjo, 2018).

Based on previous research, conducted by Kurniawan (2017) on factors related to the preparedness efforts of production employees in dealing with fire hazards at PT. Sandang Asia Maju Abadi. The results of the study using Chi-Square show that the variables associated with the preparedness efforts of production employees in the face of fire found the results of the level of the Chi-Square Poor knowledge 18.8% negative attitude 38.5% and availability of facilities and infrastructure 24%. There is a relationship between knowledge level and fire preparedness efforts (p -value = 0.009). There is a relationship between attitude and fire preparedness efforts (p -value = 0.782) and there is a relationship between the availability of facilities and infrastructure with employee preparedness efforts in the face of fire (p -value = 0.001).

PT Kilangan Lima Gunung is one of the national private companies that manages and produces raw rubber into crumb rubber, with a total of 62 production workers. The milling

section is 22 people, press as many as 10 people, wet daily 6 people, crub lebbber 18 people and general daily as many as 6 people. PT Kilang Lima Gunung realizes the importance of fostering occupational safety and health (K3) towards zero work accident conditions. Various potential hazards are seen in the production section at PT Kilangan Lima Gunung, starting from the weighing process to drying.

Fire factors can also be caused by humans and nature. Fires that are 64% caused by human factors such as throwing cigarette butts near flammable materials while fires that are 30% caused by nature such as volcanic eruptions, lightning, and drought (Rizkhe et al., 2021). According to Law Number 1 of 1970, every workplace is required to implement work safety. One of the occupational safety requirements in the workplace is to prevent, reduce and extinguish fires (Pertiwi et al., 2022). One of the common causes of fires becoming a life safety threat is the inability of individuals to save themselves in the event of a fire caused by a lack of knowledge level and the lack of knowledge related to disasters causes employees to be unable to save themselves.

An initial survey conducted by researchers on June 14, 2023 by means of a questionnaire of 10 employees, found that 6 employees (60%) had a poor level of knowledge, and as many as 6 employees (60%) had a negative attitude towards preparedness efforts in the face of fire. And at PT Kilang Lima Gunung the availability of facilities and infrastructure is still incomplete such as fire alarms, hydrants, sprinklers, and emergency exits, detectors, gathering points, exits, and k3 signs.

Based on the problems raised, the authors are interested in conducting research on factors related to the preparedness efforts of production employees in dealing with fires at PT Kilang Lima Gunung Padang in 2023.

METHODS

The type of research used in this study is quantitative with a cross sectional study design to

determine the relationship between the independent variables (level of knowledge, attitude and availability of infrastructure) with the dependent variable (preparedness efforts of production employees in dealing with fire). This research was conducted at PT Kilang Lima Gunung Padang. The research time was carried out in March-August 2023. The population in this study were all production employees. The sampling technique used was total population with a sample size of 52 production employees. Data collection using questionnaires for variables of knowledge level, attitude and availability of infrastructure using observation sheets. Univariate data analysis in the form of frequency distribution and bivariate using Chi-Square test.

RESULTS AND DISCUSSION

Based on the results of research that has been conducted through observations and questionnaires to production employees in dealing with fires at PT Kilang Lima Gunung Padang in 2023, the following results were obtained:

Table 1 Frequency Distribution of Respondents Based on Characteristics Respondents in the Production Section of PT. Kilang Lima Gunung Padang Year 2023

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
26-45 years	16	30,8
46-65 years	34	65,4
≥ 65 years	2	3,8
Total	52	100,0
Education		
SD	24	46,2
Junior High	9	17,3
Senior High	19	36,5
Total	52	100,0
Years of Service		
≤ 5 years	3	5,8
> 5 years	49	94,2

Total	52	100,0
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Based on table 1, it can be seen that the age of respondents is mostly 46-65 as many as 34 respondents (65.4%), the most respondent education is elementary school as many as 24 respondents (46.2%), and tenure > 5 years as many as 49 respondents (94.2%) at PT Kilang Lima Gunung Padang.

Table 2 Frequency Distribution of Fire Preparedness Efforts, Level of Knowledge, Attitude and Availability of Infrastructure Facilities at PT. Kilang Lima Gunung Padang Year 2023

Variables	Frequency (f)	Percentage (%)
Fire preparedness efforts		
Poor	27	51,9
Good	25	48,1
Total	52	100,0
Knowledge Level		
Low	34	65,4
High	18	34,6
Total	52	100,0
Attitude		
Negative	30	57,7
Positive	22	42,3
Total	52	100,0
Infrastructure Facilities		
Incomplete	7	13,5
Complete	45	86,5
Total	52	100,0

Preparedness Efforts in Facing Fire

The results of the study can be seen that as many as 27 (51.9%) respondents had poor fire preparedness efforts at PT. Kilang Lima Gunung Padang in 2023. The results of this study are in line with research conducted by (Fitriani, 2017)

on factors related to the preparedness efforts of production employees in facing fire hazards at PT. Sandang Asia Maju Abadi found the results of poor preparedness efforts (39.6%).

Preparedness efforts are actions taken by the government to anticipate disasters and be able to respond to a disaster situation quickly and appropriately. Meanwhile, according to the Decree of the Minister of Manpower of the Republic of Indonesia No. KEP.186 / MEN / 1999, fire prevention is an effort to prevent fires by procuring fire protection facilities and rescue facilities and establishing emergency response organizations to eradicate fires.

Researcher assumptions If employees cannot use fire infrastructure properly, there will be a risk of a large fire due to employees not knowing what to do during a fire because employees are too panicked, so that the fire extinguishers available at the company are not used to extinguish fires quickly, employees tend to run out to save themselves.

Knowledge Level

The results showed that as many as 31 (59.6%) respondents had a low level of knowledge at PT. Kilang Lima Gunung Padang in 2023. The results of this study are in line with research conducted by (Pertiwi, 2022) on the relationship between fire knowledge and fire preparedness in operator workers at PT. xyz found low knowledge results (43.6%).

The level of knowledge is the effect of the continuation of the individual's desire regarding the object through the senses possessed. Each individual has knowledge that is not the same because each person's sensing of an object is different. Knowledge consists of 6 levels namely: know, (know), understand (comprehension), application (aplication), analysis (analysis), synthesis (synthesis) and evaluation (evaluation). With good knowledge, a person will easily interpret, a person's ability to form a model that describes understanding, analyzing, synthesizing problems and making truly objective decisions (Notoatmodjo, 2018).

Researchers' assumptions The low level of knowledge of respondents in dealing with fire preparedness efforts is because there are still many respondents who have low education, namely elementary school as much as 46.2% and junior high school as much as 17.7%. Low education affects employee knowledge in fire preparedness efforts due to employees who are less capable and difficult to understand the fire simulation training material held at PT. Kilang Lima Gunung Padang.

Attitude

The results showed that as many as 30 (57.7%) respondents had a negative attitude. The results of this study are in line with research conducted by (Fatikhah, 2022) on the relationship between the description of knowledge and attitudes of employees about fire preparedness in garment companies found a negative attitude (46.1%).

Attitude is a person's closed response to a certain stimulus or object that already involves the opinion and emotion factors concerned (happy-displeased, agree-disagree, good-not good and so on). In other words, the attitude function is not yet an action (open reaction) or activity, but is a predisposition to behavior (action) or a closed reaction (Notoatmodjo, 2012).

The researcher's assumption is that the relationship between attitudes and fire preparedness efforts is caused by employees who are less careful when they are in a place that has the potential to cause a fire, such as smoking while working. In addition, the attitude of employees who do not care about the dangers of fire prevention tends to make employees work not in accordance with the company's operational standards so that they can risk a fire. The habit of employees who tend to choose to run out to save themselves rather than extinguish the source of the fire using fire protection equipment can increase the occurrence of large fires that will cause property losses that are detrimental to the company.

Availability of Infrastructure Facilities

The results showed that as many as 7 (13.5%) respondents had incomplete infrastructure facilities. The results of this study are in line with research conducted by (Ekawati, 2019) on the relationship between knowledge, attitudes, and means of protection to the preparedness of residents in dealing with fires in Rusunawa Undip Semarang found incomplete infrastructure (67%).

Infrastructure facilities are good fire protection that will increase preparedness in the face of fire hazards because of environmental conditions that will affect a person's behavior. Facilities are everything that is used as a tool in achieving goals, while infrastructure is everything

that supports the implementation of a process. Examples of facilities and infrastructure in a company are hydrants, detectors, fire extinguishers, emergency stairs (Fitriani et al., 2019).

The researcher's assumption is that there is no relationship between the availability of infrastructure and preparedness efforts in the face of fire due to the lack of employee awareness of fire prevention, this can be seen from filling out the questionnaire, there are several employees who state that there are no fire protection tools in the company. In the event of a fire, employees will immediately run to a safer place because they assume that there are no fire protection tools such as fire extinguishers, and hydrants to extinguish fire sources.

Table 3. Relationship between Knowledge Level, Attitude and Availability of Infrastructure Facilities at PT. Kilang Lima Gunung Padang Year 2023.

Variables	Fire preparedness efforts				Total		p-value
	Poor		Good		f	%	
	f	%	f	%			
Tingkat Pengetahuan							
Low	24	70,6	10	29,4	34	100,0	0,001
High	3	16,7	15	83,3	18	100,0	
Total	27		25		52	100,0	
Attitude							
Negative	21	70,0	9	30,0	30	100,0	0,006
Positive	6	27,3	16	72,7	22	100,0	
Total	27		25		52	100,0	
Infrastructure Facilities							
Incomplete	5	71,4	2	28,6	7	100,0	0,422
Complete	22	48,9	23	51,1	45	100,0	
Total	27		25		52	100,0	

Relationship between Knowledge Level and Fire Preparedness Efforts

The results showed that the proportion of respondents who were not good at employee preparedness efforts in the face of fire had more low knowledge (71.0%) compared to good knowledge (23.8%). Based on the results of statistical tests obtained $p = 0.001$ ($p < 0.05$),

meaning that there is a significant relationship between knowledge and employee preparedness efforts in dealing with fires at PT. Kilang Lima Gunung Padang in 2023.

The results of this study are in line with research conducted by (Pertiwi, 2022) on the relationship between fire knowledge and fire preparedness in operator workers at PT. xyz found that there is a relationship between knowledge

and fire preparedness p value = 0.000 ($p < 0.05$), meaning that there is a significant relationship between knowledge and fire preparedness efforts.

The researcher's assumption that there is a relationship between the level of knowledge and fire preparedness efforts is due to employees who do not care about health and safety at work such as there are still some employees who smoke in the work environment area smoking at work can risk a fire in the company. The number of employees who smoke while working is due to the lack of employees getting education related to the dangers of fire in the workplace.

Relationship between attitude and fire preparedness efforts

The results showed that the proportion of respondents who were less good at employee preparedness efforts in the face of fire had more negative attitudes (70.0%) compared to positive attitudes (27.3%). Based on the results of statistical tests obtained $P = 0.006$ ($p < 0.05$), meaning that there is a significant relationship between attitude and employee preparedness efforts in dealing with fires at PT. Kilang Lima Gunung Padang in 2023.

The results of this study are in line with research conducted by (Fatikhah, 2020) on the relationship between the description of knowledge and attitudes of employees about fire preparedness at PT. garment found there is a relationship between attitude and preparedness in the face of fire p value = 0.002 ($p < 0.05$).

The researcher's assumption is that the relationship between attitudes and fire preparedness efforts is caused by employees who are less careful when they are in a place that has the potential to cause a fire, such as smoking while working. In addition, the attitude of employees who do not care about the dangers of fire prevention tends to make employees work not in accordance with the company's operational standards so that they can risk a fire. The habit of employees who tend to choose to run out to save themselves rather than extinguish the source of fire using fire protection equipment can increase

the occurrence of large fires so that it will cause property losses that harm the company.

The relationship between the availability of infrastructure and fire preparedness efforts

The results showed that the proportion of respondents with poor fire preparedness efforts was more prevalent in the availability of incomplete infrastructure (71.4%) compared to the availability of complete facilities and infrastructure (48.9%). Based on the results of statistical tests obtained $p = 0.422$ ($p \geq 0.05$), meaning that there is no significant relationship between the availability of infrastructure facilities and employee preparedness efforts in dealing with fires in dealing with fires at PT. Kilang Lima Gunung Padang in 2023.

The results of this study are in line with research conducted by (Ekawati, 2019) on the relationship between knowledge, attitudes, and means of protection to the preparedness of residents in the face of fire at Rusunawa Undip Semarang, it was found that there was no relationship between the availability of infrastructure facilities and preparedness efforts in the face of fire with p value = 0.691 ($p \geq 0.05$).

The researcher's assumption is that there is no relationship between the availability of infrastructure facilities and preparedness efforts in the face of fire due to the lack of employee awareness of fire prevention, this can be seen from filling out the questionnaire, there are several employees who stated that there is no fire protection equipment in the company. In the event of a fire, employees will immediately run to a safer place because they assume that there are no fire protection tools such as hydrants to extinguish fire sources.

CONCLUSIONS

Based on the research that has been carried out at PT Lima Gunung Padang Refinery in 2023, it can be concluded as follows:

1. A total of 51.9% of employees are unfavorable with fire preparedness efforts at PT Kilang Lima Gunung Padang in 2023.

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2. A total of 65.4% of employees have a low level of knowledge at PT. Kilang Lima Gunung Padang in 2023.
3. A total of 57.7% of employees have a negative attitude at PT. Kilang Lima Gunung Padang in 2023.
4. A total of 13.5% of employees have incomplete infrastructure availability at PT. Kilang Lima Gunung Padang in 2023.
5. There is a relationship between the level of knowledge and fire preparedness efforts at PT. Kilang Lima Gunung Padang in 2023 (p-value = 0.001).
6. There is a relationship between attitude and preparedness efforts in dealing with fires at PT Kilang Lima Gunung Padang in 2023 (p-value=0.006).
7. There is no relationship between the availability of infrastructure and fire preparedness efforts at PT Kilang Lima Gunung Padang in 2023 (p-value = 0.422).

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