



Relationship Between Knowledge and Attitude with Unsafe Action of Veneer Setting Workers at PT Abhirama Kresna : A Cross Sectional Study

Beti Setiyaningsih¹, Wartini²

Faculty of Public Health and Health Sciences, Veteran Bangun Nusantara University, Sukoharjo, Indonesia

Email ; betisetiyaningsih21@gmail.com , wartiniskm.msc@gmail.com

Abstract. *Unsafe action is an action that does not comply with established procedures and rules which can cause work accidents. Unsafe action occurs for two reasons, such as unintentional errors and active errors or rule violations. Factor affecting unsafe action is internal and external factors. This research aims to examine the relationship between attitudes and knowledge towards unsafe action on section workers veneer setting at PT Abhirama Kresna. This research is a quantitative research using a cross sectional study design. The population in this study was 128 workers with 97 sample respondents. The variables in this study were knowledge, attitudes and unsafe actions. Bivariate analysis uses the chi square statistical test with a confidence level of 95%. This research shows that knowledge does not have a significant relationship with unsafe action (p -value = 0.985; PR (CI 95%) = 0.288–3.391). On the other hand, attitude has a significant relationship with unsafe action (p -value = 0.022; PR (CI 95%) = 0.099–0.868).*

Keywords Knowledge, Attitude, Unsafe Action

1. INTRODUCTION

The interaction between humans and work in the production process has potential dangers that can cause accidents (Widiatmoko, 2020). Work accidents are one of the big challenges faced by companies, especially in the manufacturing industry sector, and most of these accidents are caused by unsafe actions and unsafe conditions (Larasatie et al., 2022). Work accidents can be prevented by improving occupational safety and health (OSH) through risk management, including hazard identification, analysis of potential hazards, risk assessment, risk control, and monitoring and evaluation to create a safe work environment, increase productivity, and reduce the number of accidents (Restuputri Dian Palupi, 2020).

Heinrich explained that 80% of the causes of work accidents are unsafe action factors and 20% are caused by unsafe condition factors (Porajow et al., 2022). Based on Notoatmodjo behavioral concept, the factors that influence unsafe action are internal and external factors. Internal factors, namely the characteristics of the person concerned, are innate, for example knowledge, attitudes, physical condition, psychological condition, motivation and gender. External factors are the work environment, policies and procedures, training and supervision (Dwi Ayu Septiana, 2020).

Unsafe action is an action that does not comply with established procedures and rules (Desmayanny & Wahyuni, 2020). Based on the relationship with the occurrence of unsafe action factors, there are several factors that cause unsafe action to occur, one of which is

knowledge about OSH. When workers carry out their duties without adequate understanding, they may not realize that the actions they take fall into the unsafe action category, thereby increasing the risk of work accidents (Noviyanti et al., 2022). Attitude is one of the causes of unsafe action, because a person's attitude towards the importance of work safety influences their behavior in the workplace. If the attitude towards OSH is positive (for example, respecting safety rules and being proactive in maintaining safety), then the risk of carrying out unsafe actions will be reduced. On the other hand, a careless or negligent attitude towards OSH often leads to dangerous actions (Noviyanti et al., 2022). Based on research (Jesica Sangaji, Siswi Jayanti, 2020) work attitudes such as not using personal protective equipment in accordance with the provisions, not returning and tidying up equipment after work, smoking at work, joking excessively at work, not using safety belts when working at heights and using equipment that is not safe for work are also the causes of work accidents in PT (Indonesia, 1970).

The International Labor Organization (ILO) states that every year more than 250 million work accidents occur and more than 160 million workers become ill due to workplace hazards. Moreover, 1.2 million workers died due to accidents and illness at work. In the period January - November 2024, the number of work accident cases in Indonesia was recorded at 399,871 cases (Ministry of Manpower, 2024). In 2024, for the January - November period, Central Java recorded a fairly high number of work accidents, namely 51,726 cases, occupying the 3rd position with the highest number of work accidents in Indonesia. This figure shows how important it is to pay attention to the implementation of OSH, especially in sectors that have high risks (Ministry of Manpower, 2024).

PT Abhirama Kresna is a limited liability company that operates in the plywood sector with various product variations. Results of a preliminary survey conducted in November 2024, from 10 workers in the Veneer Setting section of PT Abhirama Kresna who were taken at random. It was found that 80% of workers had poor knowledge, 70% showed poor work attitudes even though training and work supervision were routinely carried out every week. Types of unsafe actions carried out by workers in the Veneer Setting section of PT Abhirama Kresna include not using complete personal protective equipment, placing work equipment out of place, and joking excessively while working. The level of work accidents in the Veneer Setting section of PT Abhirama Kresna is a major concern, with an average of 5 incidents per month, making it the department with the highest number of work accidents compared to other departments. Although the incident did not result in fatalities, it had a significant impact on productivity because it reduced employee working hours. This shows the need to improve work

safety and implement more effective work safety and health protocols to protect workers and maintain company operational stability.

This research aims to examine the relationship between attitudes and knowledge and unsafe actions in veneer setting workers at PT Abhirama Kresna. This research was motivated by the high risk of work accidents in the veneer setting, where workers are in direct contact with work equipment which can pose a risk of work accidents. Understanding the relationship between the level of knowledge and attitudes and unsafe actions is very important for identifying the root of the problem and designing effective intervention programs, such as targeted OSH training and education.

The findings of this research focus on manufacturing workers, namely the Veneer Setting section of PT Abhirama Kresna, which is a work environment with the potential for work accidents due to unsafe actions. This research prioritizes workers with moderate workloads, namely only using light work aids such as cutters, compared to previous research which focused on construction workers, height workers, and loading and unloading workers who require high workloads and use heavy equipment which can experience a higher risk of work accidents. It is hoped that the results of this research will not only contribute to improving work safety at PT Abhirama Kresna but will also become a reference for other companies operating in similar sectors. Encouraging safer work behavior through increased knowledge, companies can create a more productive, efficient and sustainable work environment.

This research is a quantitative study using a cross sectional study design. Data collection techniques and instruments using questionnaires. Data were analyzed using univariate and bivariate analysis. Based on the background described, the researcher is interested in conducting research with the title "Relationship Between Knowledge and Attitude with Unsafe Action of Veneer Setting Workers at PT Abhirama Kresna: A Cross Sectional Study".

2. LITERATURE REVIEW

Occupational Safety and Health (OSH) is an effort to protect workers so that they remain safe, healthy and productive while carrying out their duties in the workplace. OSH includes managing risks that can cause work accidents or work-related diseases (Lumadja et al., 2024). The main goal of OSH is to create a safe and comfortable work environment, protect workers from danger, and increase work efficiency and productivity (Ningsih & Ferijani, 2020). The importance of OSH in the work environment is to protect workers from the risk of work accidents, injuries or occupational diseases. A safe and healthy work environment can

increase concentration and work efficiency (Sarbiah, 2023). OSH implementation is necessary to comply with applicable government regulations, such as Law no. 1 of 1970 concerning Work Safety. This law aims to provide legal protection for workers who experience work accidents or work-related illnesses (Indonesia, 1970).

OSH knowledge is knowledge about good occupational safety and health as well as work experience possessed by workers, regarding the dangers of accidents and work-related diseases (Yenia Endriastuty, 2020). Someone with extensive OSH knowledge tends to have awareness of OSH behavior because they know the risks that will arise if they do not pay attention to OSH (Arkan Syah & Mirwan, 2023). Attitude is a person's response that is not directly observed and is still closed to an object. Attitude can also influence the occurrence of work accidents (Khoriantari, 2022). Attitudes towards working conditions, accidents and safe work practices are important because most work accidents are caused by human negligence (Nur Susanty et al., 2023). Unsafe Action can be said to be a failure committed by workers and an inability to comply with previously established work conditions and procedures, so that this action can be one of the causes of work accidents (Jesica Sangaji, Siswi Jayanti, 2020). There are two things that cause unsafe action to arise, namely because workers accidentally make mistakes and violations committed by workers or active mistakes (Pratama, 2020). The impact of unsafe actions such as not using personal protective equipment or operating equipment not according to procedures can cause physical accidents, such as wounds, broken bones, or fatal injuries, economic losses, and can reduce psychological well-being (Fathimahhayati et al., 2021).

Based on various studies, workers' knowledge and attitudes have an important role in influencing unsafe actions. Research by (Noviyanti et al., 2022), found a significant relationship between knowledge ($p=0.002$) and attitudes ($p=0.000$) with unsafe actions. However, research (Porajow et al., 2022) shows different results, where no relationship was found between knowledge and unsafe action, although there was a significant relationship with worker attitudes. This difference shows that apart from knowledge, attitude is also a key factor influencing unsafe action, depending on the conditions and characteristics of workers in each workplace.

3. METHODS

This research is a quantitative study using a cross sectional study design. This research was conducted at PT Abhirama Kresna, Nguter District, Sukoharjo Regency. The research was carried out from December 2024 to January 2025. The steps in this research were licensing,

determining sampling techniques, validity and reliability testing, data collection, data analysis, and data presentation. The population in this study was 128 workers in the Veneer Setting section of PT Abhirama Kresna. The sample in this study used a random sampling technique taken using the Slovin formula, so that the sample in this study was 97 respondents.

Validity and reliability tests were carried out at PT Warna Bhuana Investama Sukoharjo in December 2024. Validity tests used *Pearson* and reliability testing using *Cronbach Alpha*. The results of the instrument validity test were declared valid and reliable with $r > 0.60$ (work accident (0.627), knowledge (0.692), attitude (0.827), unsafe action (0.755)), so it can be used as a research measuring tool that can be accounted for. This instrument is then used to collect research data.

Data collection techniques and instruments used a questionnaire via Google form, which contained respondent characteristics, work accidents, OSH training, OSH knowledge, OSH attitudes and Unsafe Action. Data were analyzed using univariate and bivariate analysis. Univariate analysis aims to explain or describe the research results in the form of frequency distributions and percentages of each variable. Bivariate analysis was carried out to determine the relationship between the independent variable and the dependent variable using the Chi-Square statistical test with a confidence level of 95%.

4. RESULT

Based on the research that has been conducted, it is known that the characteristics of respondents based on age, gender, length of work, working hours, last education, work accidents and OSH training are as follows:

Table 1. Characteristics of Respondents

Characteristics	Frequency	Presentation
Age		
19 - 25	35	36,1
26 - 35	32	33,0
36 - 45	18	18,6
46 - 55	9	9,3
56 - 65	3	3,1
> 65	0	0
Total	97	100,0
Gender		
Man	32	33,0
Woman	65	67,0

Characteristics	Frequency	Presentation
Total	97	100,0
Length of Work		
< 6 Years	41	42,3
6 – 10 Years	46	47,4
> 10 Years	10	10,3
Total	97	100,0
Working Hours		
8 hours	97	100,0
Total	97	100,0
Last Education		
Elementary school	4	4,1
First Middle School	14	14,4
Senior High School	79	81,4
Total	97	100,0
Work Accident		
Have Experienced a Work Accident	45	46,4
Never Experienced a Work Accident	52	53,6
Total	97	100,0
Occupational Safety and Health Training		
Conduct Training	53	54,6
Not Carrying Out Training	44	45,4
Total	97	100,0

Based on Table 1, it is known that the majority of employees are aged 19–25 years (36.1%), followed by the age group 26–35 years (33.0%), aged 36–45 years (18.6%), aged 46–55 years (9.3%), aged 56–65 years (3.1%), and there are no employees aged over 65 years (0%). The majority of employees are women, namely 65 people (67.0%), while there are 32 men (33.0%). Most employees' length of service is in the range of 6–10 years (47.4%), followed by employees with less than 6 years of service (42.3%), and more than 10 years of service (10.3%). The average employee working hours is 8 hours per day. In terms of final education, the majority of employees have high school education (81.4%), followed by junior high school graduates (14.4%), and the last position is elementary school graduates (4.1%).

Data from the questionnaire shows that 46.4% of employees in the Veneer Setting section of PT Abhirama Kresna have experienced work accidents such as being cut/scratched by a cutter, pinched, slipped, tripped, fallen and hit by falling objects. OSH training, as many as 54.6% of employees have attended training. Employees who take part in training generally

have a working period of more than 4 years. Types of OSH training are first aid training for accidents, work accident prevention training by conducting fire handling training.

Table 2. Distribution of Knowledge, Attitude and Unsafe Action Variables

Variable	Frequency	Presentation
Knowledge		
Good	80	82,5
Bad	17	17,5
Total	97	100,0
Attitude		
Support Safe Behavior	18	18,6
Does Not Support Safe Behavior	79	81,4
Total	97	100,0
Unsafe Action		
Risk of Work Accident	74	76,3
No Risk of Work Accidents	23	23,7
Total	97	100,0

Based on Table 2, the majority of employees have good knowledge of OSH (82.5%), while the rest have poor knowledge (17.5%). However, the majority of employees in the Veneer Setting section of PT Abhirama Kresna do not implement safe work behavior, with 79 people (81.4%) not supporting safe behavior, and only 18 people (18.6%) supporting it. In addition, 74 employees (76.3%) have a high risk of work accidents, while 23 employees (23.7%) have no risk of work accidents.

Table 3. Relationship between Knowledge and Unsafe Action

Knowledge	Unsafe Action				Total		P-value	PR (CI 95%)
	No risk of work accidents		Risk of Work Accident					
	n	%	n	%	n	%		
Good	19	23,8	61	76,3	80	100	0,985	0,988 (0,288 – 3,391)
Bad	4	23,5	13	76,5	17	100		
Total	23	23,7	74	76,3	97	100		

Based on Table 3, test results *Chi Square* shows that H_0 is accepted and H_a is rejected, meaning there is no relationship between knowledge and unsafe action. This relationship is proven by value *p value* $0.985 > 0.05$. The Prevalence Ratio (PR) value obtained was $0.988 < 1$, so it can be concluded that knowledge is a protective factor for unsafe action.

Table 4. Relationship between Attitudes and Unsafe Actions

Attitude	Unsafe Action						P-value	PR (CI 95%)
	No Risk of Work		Risk of Work		Total			
	Accidents		Accident					
	n	%	n	%	n	%		
Does Not Support Safe Behavior	15	19,0	64	81,0	79	100	0,022	0,293 – (0,099 – 0,868)
Support Safe Behavior	8	44,4	10	55,6	18	100		
Total	23	23,7	74	76,3	97	100		

Based on Table 4, test results *Chi Square* shows that H_0 is rejected and H_a is accepted, meaning that there is a relationship between attitude and unsafe action. This relationship is proven by value *p value* $0.022 < 0.05$. The Prevalence Ratio (PR) value was $0.293 < 1$, so it can be concluded that attitude is a protective factor for unsafe action.

Discussion

The Relationship of Knowledge to Unsafe Action

Knowledge is a very important aspect in shaping individual behavior. Lack of knowledge about OSH in the workplace can hinder a person's ability to recognize potential dangers that exist in the work environment (Santi Wulandari, Siswi Jayanti, 2021). Good knowledge about OSH can be influenced by several factors, one of which is the level of OSH education and training. Based on research data, the majority of workers in the Veneer Setting section of PT Abhirama Kresna have a high school level education, with a total of 79 workers (81.4%). In addition, 53 workers (54.6%) have participated in job training that focuses on occupational safety and health. It can be said that a higher level of education can provide a better knowledge base for understanding occupational risks, while OSH training directly improves workers' ability to recognize potential hazards and take preventive steps. This is in line with findings (Jesica Sangaji, Siswi Jayanti, 2020) among shipyard workers, where routine training and OSH counseling proved effective in increasing workers' awareness and knowledge regarding work safety.

Based on the results of data analysis, this research proves the hypothesis which states that there is no significant relationship between the knowledge variable and the unsafe action variable. The results of statistical tests using the Chi-Square test are proven by the *p-value* = $0.985 > 0.05$. Supported by a Prevalence Ratio (PR) value of $0.988 < 1$, so it can be concluded that knowledge is a protective factor for unsafe action. This is due to the fact that someone who has good knowledge does not necessarily show good behavior. In other words, having good knowledge does not always guarantee that someone will behave safely. This research is in

accordance with research findings (Porajow et al., 2022) that there is no relationship between knowledge and unsafe action.

The results of this research are also in line with research conducted by (Yusril & Alwil, 2020) which showed that there was no relationship between knowledge and unsafe action, with value $p\text{-value} = 0.335 > 0.05$. However, this research is not in line with research conducted by (Jesica Sangaji, Siswi Jayanti, 2020) that there is a relationship between knowledge and unsafe actions of workers in the PT Apart from that, there is confirmation regarding potential dangers, areas that must use personal protective equipment and OSH information in the form of posters, banners or other information. So it can be concluded that the majority of workers have a good level of knowledge regarding unsafe actions. However, most of them still carry out unsafe actions in the work environment. Lack of understanding about occupational safety and health makes it difficult for someone to recognize potential dangers in their surroundings, making it difficult to determine appropriate steps to control these risks. As a result, workers become less aware of the risks that may arise as a result of their behavior while working.

Relationship of Attitude with Unsafe Action

Attitude is an internal response that cannot be observed directly and is still hidden within a person to a stimulus or object. Attitude is a factor that originates from a person that encourages him to carry out an action. A person's attitude is influenced by awareness, emotions, motivation, experiences and habits (Porajow et al., 2022). As a complex phenomenon, attitudes can be interpreted as evaluative statements that are positive or negative. Apart from that, attitude is also an important factor that influences work safety (Santi Wulandari, Siswi Jayanti, 2021).

The large number of attitudes that do not support safe behavior shown by employees in the Veneer Setting section at PT Abhirama Kresna, is evident from research results that as many as 46.4% of employees have experienced work accidents, which shows that work attitudes that do not support safety contribute significantly to incidents in the workplace. Attitudes that do not support safe behavior at work can be influenced by various factors, one of which is age, length of work, and knowledge about work safety. Based on research data, the average age of workers in the Veneer Setting section at PT Abhirama Kresna is 19 – 35 years, with 67 workers (69.1%). Young workers tend to be less emotionally stable and often underestimate the dangers in the workplace. On the other hand, as people get older, a person usually shows a more rational mindset, better ability to control emotions, as well as intellectual and psychological maturity which can increase awareness of the risk of work accidents (Jesica Sangaji, Siswi Jayanti, 2020). The period of work also influences workers' experience and

ability to recognize dangerous points in the workplace. Most workers have worked for 6–10 years (47.4%), with longer experience they will better understand potential dangers and can minimize errors, which ultimately reduces the risk of accidents (Jesica Sangaji, Siswi Jayanti, 2020).

Knowledge also plays a significant role, based on research (Jesica Sangaji, Siswi Jayanti, 2020) proving that a lack of knowledge can lead to unsafe actions, such as not complying with standard operating procedures, not using personal protective equipment or joking while working. On the other hand, safety training programs, such as OSH induction, emergency response training, and safety talks, can increase worker awareness of dangers, thereby helping to reduce attitudes that do not support unsafe behavior that has the potential to cause accidents.

Based on the results of data analysis, this research proves the hypothesis which states that there is a significant relationship between the attitude variable and the unsafe action variable in workers in the veneer setting section of PT Abhirama Kresna, proven by the Chi-Square statistical test value obtained $p\text{-value } 0.022 < 0.05$. Supported by the Prevalence Ratio (PR) value obtained at $0.293 < 1$, so it can be concluded that attitude is a protective factor for unsafe action. The results of this research are in line with research (Pangestu, 2020) that the attitude variable and unsafe action have value $p\text{ value } 0.000 < 0.05$, so these results show that there is a significant relationship between attitudes and unsafe actions in Palm Oil Factory workers in the Bah Jambi processing unit of PT Perkebunan IV. The results of this research show that workers who have negative attitudes such as lack of concentration, rushing and not wearing shoes, not following standard operational procedures, placing equipment carelessly, joking while working, not paying attention to existing work safety signs, are more dominant in carrying out unsafe actions, which can cause work accidents (Pangestu, 2020). Thus, it can be concluded that workers who show poor attitudes during work have a greater chance of committing unsafe actions at work.

5. CONCLUSION

Based on the results of research on the relationship between knowledge and attitudes and unsafe actions among Veneer Setting workers at PT Abhirama Kresna with 97 respondents, it can be concluded that the majority of respondents have good knowledge, namely 80 people (82.5%). However, only 18 people (18.6%) had a supportive attitude towards safe behavior. Meanwhile, 23 respondents (23.7%) stated that unsafe actions did not pose a risk of causing work accidents. This research also shows that knowledge does not have a significant

relationship with unsafe action (p-value = 0.985; PR (CI 95%) = 0.288–3.391). On the other hand, attitude has a significant relationship with unsafe action (p-value = 0.022; PR (CI 95%) = 0.099–0.868).

6. LIMITATION

This study has several limitations that need to be acknowledged. The research only focuses on the relationship between knowledge, attitudes and unsafe actions, so it does not consider other factors. Factors such as work culture, work experience, work environment are difficult to control in this research because they are complex, involve company policies, collective habits, and specific workplace conditions that cannot be directly intervened by researchers during the data collection process. Data collected through questionnaires depends on the honesty of respondents, so there is the potential for social bias, where respondents tend to give answers that are considered more socially acceptable compared to answers that reflect actual conditions. It is hoped that this limitation can be a consideration for further research which can use more comprehensive methods, to provide deeper results and wider generalizations.

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