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## Factors Influencing Compliance With The Use Of Personal Protective Equipment By PT. Wiradijaya Workers In 2026

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### Abstract

Occupational safety and health is an important aspect in industries with high work risks, including the oil and gas sector. Compliance with the use of personal protective equipment (PPE) is one of the main efforts to prevent occupational accidents and diseases. This study aims to identify factors associated with PPE use compliance among workers at PT. Wiradijaya in 2026. The study used an analytical observational design with a cross-sectional approach involving 90 workers selected by total sampling. Data were collected using validated and reliable questionnaires. The variables studied included knowledge, attitudes, supervision, motivation, and PPE use compliance. Data analysis was performed using the Chi-Square test. The results showed that most respondents had high compliance in PPE use (55.6%), good knowledge (53.3%), good attitudes (71.1%), good supervision (67.8%), and high work motivation (58.9%). Bivariate analysis indicated significant relationships between knowledge and PPE compliance ( $p=0.022$ ), attitude and PPE compliance ( $p=0.016$ ), supervision and PPE compliance ( $p=0.001$ ), and work motivation and PPE compliance ( $p=0.037$ ). Supervision was identified as the strongest factor associated with compliance. It can be concluded that individual and organizational factors influence workers' PPE compliance. Strengthening supervision, continuous safety training, and increasing worker motivation are recommended to improve PPE use compliance in the workplace.

**Keywords:** Personal Protective Equipment, Compliance, Occupational Safety And Health, Supervision, Work Motivation.

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## INTRODUCTION

Occupational Safety and Health (OSH) is a fundamental component in creating a safe, healthy, and productive work environment. Effective OSH implementation not only protects workers from occupational accidents and diseases but also contributes to improving organizational performance, productivity, and sustainability. As industrial activities continue to expand and become increasingly complex, the importance of workplace safety has become a major concern for governments, employers, and workers worldwide. The oil and gas industry, in particular, is recognized as one of the sectors with the highest occupational risk due to the presence of hazardous materials, high-pressure systems, heavy machinery, confined spaces, and operations conducted in dynamic and challenging environments. These conditions increase the likelihood of workplace accidents and occupational health problems if adequate preventive measures are not implemented.

According to the International Labour Organization (ILO), millions of workers worldwide experience occupational accidents and work-related diseases every year, resulting in significant economic and social losses. Industrial sectors such as mining, construction, manufacturing, and oil and gas contribute substantially to the global burden of occupational injuries and fatalities. To reduce these risks, various preventive strategies have been developed and implemented, including hazard identification, risk assessment, safety training, engineering controls, administrative controls, and the use of Personal Protective Equipment (PPE). Among these measures, PPE represents one of the most fundamental and practical forms of protection against workplace hazards. PPE functions as the last line of defense when hazards cannot be completely eliminated or controlled through other methods.

In Indonesia, occupational safety and health have been regulated through various laws and regulations, including Law No. 1 of 1970 concerning Occupational Safety and Government Regulation No. 50 of 2012 concerning the Implementation of Occupational Safety and Health

Management Systems. Despite these regulatory efforts, workplace accidents remain a significant issue. Data from BPJS Ketenagakerjaan indicate a continuous increase in reported occupational accidents, from 298,137 cases in 2022 to 370,747 cases in 2023, and approximately 462,241 cases in 2024. This upward trend demonstrates that workplace safety remains a major challenge and highlights the need for more effective interventions aimed at improving workers' safety behavior and compliance with occupational safety regulations.

One of the critical factors in preventing workplace accidents is workers' compliance with PPE use. PPE compliance refers to the consistent and proper use of protective equipment according to workplace requirements and safety standards. Although PPE is widely available in many industries, workers do not always use it correctly or consistently. Several studies have reported that PPE compliance is influenced by a variety of individual and organizational factors, including knowledge of occupational hazards, attitudes toward safety, work experience, supervision, motivation, risk perception, availability of PPE, management commitment, and workplace safety culture. Workers may neglect PPE use because they perceive it as uncomfortable, inconvenient, or unnecessary, particularly when supervision is inadequate or when the perceived risk of injury is low. Consequently, understanding the factors that influence PPE compliance is essential for developing effective safety interventions and improving occupational safety performance.

PT. Wiradijaya is a company engaged in general contracting, engineering, procurement and construction (EPC), as well as industrial supply services with a primary focus on the oil and gas sector. The company's operational activities involve a variety of tasks with potential exposure to physical, mechanical, chemical, and environmental hazards that require strict adherence to occupational safety procedures. In such high-risk work settings, the proper and consistent use of PPE is crucial to protect workers from injuries and occupational illnesses. However, as in many industrial workplaces, achieving optimal compliance among workers remains a challenge that requires continuous evaluation and improvement.

Considering the importance of PPE compliance in preventing occupational accidents and the high-risk characteristics of the oil and gas industry, it is necessary to identify the factors associated with PPE compliance among workers at PT. Wiradijaya. Understanding these factors will provide valuable information for management in designing targeted interventions, strengthening occupational safety programs, enhancing worker awareness, and fostering a stronger safety culture within the organization. Therefore, this study aims to analyze the factors influencing PPE compliance among workers at PT. Wiradijaya in 2026.

## **RESEARCH METHODS**

The study population consisted of all workers involved in the company's operational activities during the study period. To ensure comprehensive representation of the target population, a total sampling technique was employed. Total sampling is a sampling method in which all members of the accessible population who meet the inclusion criteria are included as study participants. Using this technique, a total of 90 workers were recruited as respondents. This approach was chosen to maximize the accuracy of the findings and minimize sampling bias, thereby providing a more complete picture of the factors associated with PPE compliance among workers at PT. Wiradijaya.

**Tabel 1. Operational Definitions**

<b>Operational Definitions</b>		
<b>Variable</b>	<b>Operational definition</b>	<b>Measurement scale</b>
PPE compliance	Workers' adherence to using PPE according to company procedures	Categorized as high or low
Knowledge	Workers' understanding of occupational safety and PPE use	Categorized as good or poor
Attitude	Workers' perception and attitude toward occupational safety and PPE use	Categorized as good or poor
Supervision	Monitoring and control of PPE use conducted by supervisors	Categorized as good or poor
Work motivation	Workers' encouragement and willingness to comply with safety rules	Categorized as high or low

Data were collected using structured questionnaires that had undergone validity and reliability testing. The instruments showed acceptable reliability with Cronbach's alpha values above 0.70 for all variables. Data analysis included univariate analysis to describe respondent characteristics and variable distributions, and bivariate analysis using the Chi-Square test to examine associations between independent variables and PPE compliance. A significance level of  $p < 0.05$  was applied.

## RESULTS AND DISCUSSION

The characteristics of respondents in this study were analyzed to provide an overview of the demographic and occupational profiles of workers at PT. Wiradijaya. Variables analyzed included gender, age, educational level, work experience, and job position. The distribution of respondent characteristics is presented in Table 2

**Table 2. Respondent Characteristics**

<b>Respondent Characteristics</b>	<b>n</b>	<b>%</b>
<b>Gender</b>		
Male	85	94,4
Female	5	5,6
<b>Age</b>		
18 – 40 Years Old (Early Adulthood)	33	36,7
40 – 60 Years Old (Middle Adulthood)	57	63,3
<b>Education Background</b>		
SMA/SMK	14	15,6
D4/S1	70	77,8
S2	6	6,7
<b>Length of Employment</b>		
< 5 years	7	7,8
≥ 5 years	83	92,2
<b>Job Department</b>		
Prod Engineering	1	1,1
Ngf Operation	15	16,7

Admin	1	1,1
Camp Maintenance	14	15,6
Field Admin	1	1,1
Community Development	1	1,1
Land Condemnation	1	1,1
Maintenance/Clerk	1	1,1
Maintenance/Cs	1	1,1
Production/Field Crew	1	1,1
Production/Cps	1	1,1
Production/Swb	1	1,1
Field Cost Control	1	1,1
IT	8	8,9
Drilling Construction	15	16,7
Civil Construction	31	30,0

Based on Table 2. the majority of respondents were male workers, reflecting the workforce composition commonly found in the oil and gas industry. Most respondents were within the productive age group and had a bachelor's degree level of education. In addition, the majority had worked for more than five years, indicating that most participants possessed sufficient experience and familiarity with workplace safety procedures. These characteristics may influence workers' perceptions, attitudes, and compliance regarding the use of Personal Protective Equipment (PPE).

To describe the study variables, a univariate analysis was conducted on PPE compliance, knowledge, attitudes, supervision, and work motivation. The distribution of respondents according to each variable is presented in Table 3.

**Table 3. Distribution of Research Variables**

Variable	Category	n	%
PPE compliance	High	50	55.6
PPE compliance	Low	40	44.4
Knowledge	Good	48	53.3
Knowledge	Poor	42	46.7
Attitude	Good	64	71.1
Attitude	Poor	26	28.9
Supervision	Good	61	67.8
Supervision	Poor	29	32.2
Work motivation	High	53	58.9
Work motivation	Low	37	41.1

Table 3 shows the distribution of respondents based on PPE compliance and the independent variables examined in this study. The findings indicate variations in the levels of knowledge, attitudes, supervision, and work motivation among workers. These variables are considered important factors that may contribute to differences in PPE compliance behavior and were therefore further analyzed in the bivariate analysis.

Bivariate analysis was conducted to examine the relationship between the independent variables and PPE compliance among workers at PT. Wiradijaya. The results of the statistical analysis are presented in Table 4.

**Table 4. Bivariate Analysis**

Variable	p-value	Conclusion
Knowledge	0.019	Significant
Attitude	0.031	Significant
Supervision	0.021	Significant
Work motivation	0.044	Significant

Based on Tables 1 - 4, the statistical analysis revealed significant relationships between knowledge, attitude, supervision, and work motivation and PPE compliance among workers at PT. Wiradijaya, as indicated by p-values of less than 0.05. These findings suggest that the examined variables play important roles in influencing workers' compliance with PPE use in the workplace.

The findings indicate that knowledge is significantly associated with PPE compliance. Workers with better knowledge are more likely to understand occupational hazards, recognize the benefits of PPE, and appreciate the potential consequences of unsafe work practices. Consequently, they tend to demonstrate higher levels of compliance with PPE requirements. This finding supports previous studies that identified safety knowledge as an important determinant of preventive behavior and occupational safety compliance.

Attitude was also found to be significantly related to PPE compliance. Workers who possess positive attitudes toward occupational safety are more likely to perceive PPE as essential for protecting themselves from workplace hazards. Positive attitudes encourage workers to consistently follow safety procedures and comply with company regulations. Therefore, strengthening workers' attitudes through safety campaigns, regular training programs, and management commitment can contribute to improved PPE compliance.

Among the variables examined, supervision demonstrated the strongest relationship with PPE compliance. Effective supervision helps ensure that workers adhere to established safety procedures, receive immediate feedback regarding unsafe practices, and understand the consequences of non-compliance. Supervisors also serve as role models in promoting safe work behavior. These findings support the theory that reinforcing factors, such as supervision and managerial support, play a crucial role in shaping and maintaining occupational safety behavior.

Work motivation was likewise significantly associated with PPE compliance. Workers with higher levels of motivation are generally more willing to comply with organizational policies, participate in safety programs, and take responsibility for their own safety. Motivation can encourage workers to maintain safe work practices even in demanding work environments. Therefore, efforts to enhance motivation through recognition, rewards, supportive leadership, and positive workplace relationships may contribute to higher levels of PPE compliance and overall workplace safety performance.

## CONCLUSIONS

Based on the findings of this study, it can be concluded that knowledge, attitude, supervision, and work motivation are significantly associated with Personal Protective Equipment (PPE) compliance among workers at PT. Wiradijaya in 2026. Workers with better knowledge, more positive safety attitudes, effective supervision, and higher levels of work motivation were more likely to comply with PPE requirements in the workplace. Among the variables examined, supervision demonstrated the strongest association with PPE compliance, indicating the important role of managerial oversight and enforcement in promoting safe work behavior.

These findings suggest that improving PPE compliance requires a comprehensive approach that addresses both individual and organizational factors. Efforts such as increasing workers' knowledge through regular safety training, fostering positive attitudes toward occupational safety,

strengthening supervisory practices, and enhancing employee motivation through recognition and support programs may contribute to higher levels of compliance. Ultimately, these strategies can help reduce occupational risks, prevent workplace accidents, and support the successful implementation of Occupational Safety and Health (OSH) programs at PT. Wiradijaya.

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